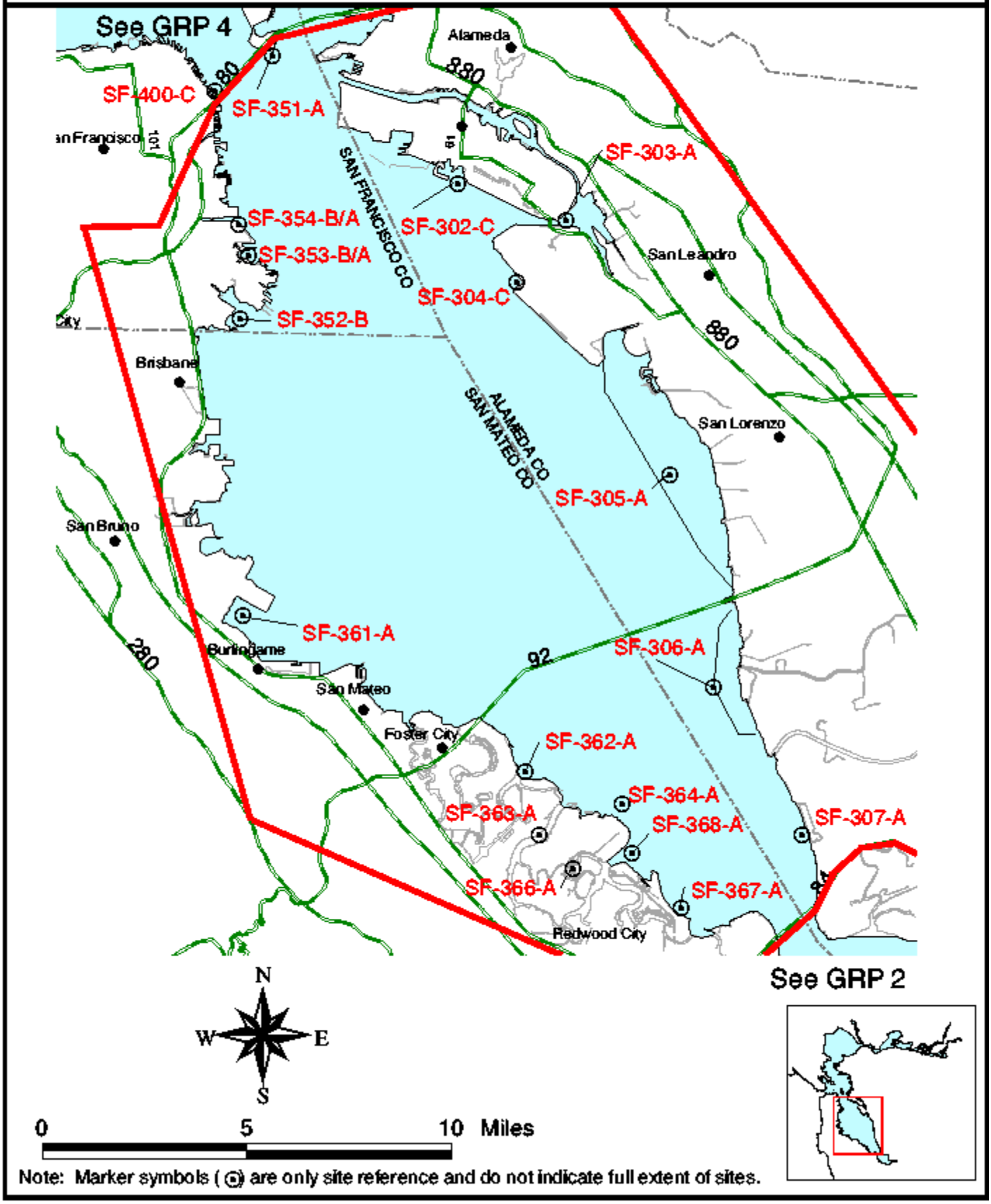
SF Geographic Response Area 3
Anchorage 9
Environmentally Sensitive Sites



Note: Marker symbols (⊙) are only site reference and do not indicate full extent of sites.

Geographic Response Plan - 3

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GRP 3 Site Index/Response Actions

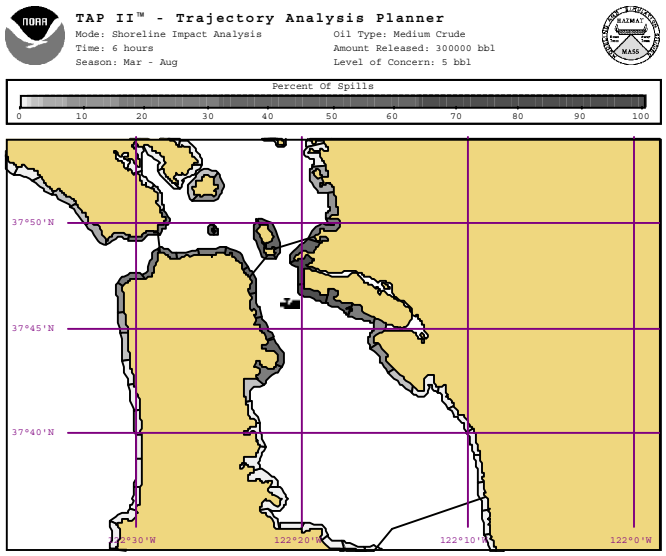
Site ID	Priority	Site Name	Assignment	Date/Time Required	Date/Time Completed
SF-302		Alameda Eelgrass Beds			
SF-303		San Leandro Bay			
SF-304		Bay Farm Island Eelgrass Beds			
SF-305		San Lorenzo Creek to Johnson Landing			
SF-306		Alameda Creek Marshes			
SF-307		Coyote Hills Slough Marshes			
SF-351		Yerba Buena Island			
SF-352		South Basin, Hunters Point			
SF-353		Heron's Head Park – India Basin			
SF-354		Islais Creek – Pier 94 Saltmarsh			
SF-361		Airport Mudflat			
SF-362		Belmont Slough			
SF-363		Steinberger Slough			
SF-364		Bair Island			
SF-365		Redwood Creek			
SF-366		Corkscrew Slough			
SF-367		Greco Island / Ravenswood Slough			

ACP Sensitive Site Resource List - GRP 3

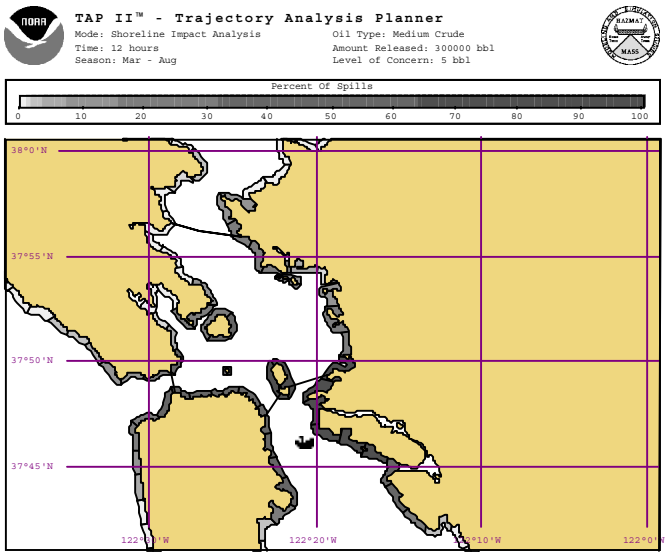
SITE	SUB	SITENAME	HBOOM	SWBM	XBOOM	SORB	Bboat	# / Type Skimmer	Special Equipment	Deploy Personnel
		SO Strategy Objective					/ skiff			
2-302 .	1	Alameda Eelgrass Beds	3000				2 / 0			**6**
		7 Deflect oil past eelgrass bed and toward collection / protection deployments of San Leandro Bay: 2-303.								
2-303 .	1	San Leandro Bay	1200	300	250 tide	200	2/1	1 portable &VT	Bboat: very shallow draft	**9 (30 support personnel)**
		5,6 Direct oil away from Alameda shore to shoreside collection at Bay Farm Island Bridge.								
	. 2	San Leandro Bay	1500				2/1	1 sps		**8**
		7 Divert oil away from Elsie Romer Bird Sanctuary to collection in the San Leandro Channel.								
	. 3	San Leandro Bay	3000			100	2/1	1 SPS or mobil		
		5 Exclude oil from entering the bay via Oakland Estuary.								
2-304 .	1	Bay Farm Island Eelgrass Beds	1000				1/1			**4 PERSONS**
		7 Minimize oil moving into the area by positioning a deflection boom from the runway point to diver oil borne on currents past.								
	. 2	Bay Farm Island Eelgrass Beds	2000	2000			2/2	1 portable & VT		**8 PERSON**
		6 Maximize oil capture at this locale with deflection to shore skimming unit.								
2-305 .	1	San Lorenzo Creek to Johnson Landing	15000	4500'		500'	25/28	3 portable	10,000' 1/2" anchor line, 5 vac trucks,	**108**
		5 Prevent oil from entering the marsh. Should oil enter the marsh, contain oil to the smallest possible area of marsh.								
2-306 .	1	Alameda Creek Marshes	10000			15000	17/2			**34**
		5&8 Exclude oil from channels or stranding in the marsh. Divert it to less sensitive and more accessible shorelines on either side.								
2-307 .	1	Coyote Hills Slough Marshes	1000	500		4000	3/1			**10**
		567 Exclude oil from channels and marsh, and to divert it to shorelines less sensitive and more accessible for oil recovery and cleanup. The following site-specific								
2-351 .	1	Yerba Buena Island	3000'				5/2		3000' 1/2" anchor line	**14**
		8&7 Prevent oiling of harbor seals and rocks near where they haul out. Avoid driving hauled out harbor seals into the water.								
2-352 .	1	South Basin, Hunters Point	3500				3*/0	1/1 SFS/SSS	*shallow draft Bboat	**8-12**
		5,8 Exclusion/protection booming to prevent oil from reaching marsh in South Basin or beaches at Candlestick Point.								
	. 2	South Basin, Hunters Point	500				1*/0		*shallow water Bboat	**3**
		7 Deflect oil away and past site.								
2-353 .	1	Heron's Head Park - India Basin		80		80				**2**
		6 Prevent oil from entering small tidal inlets to inner ponds and lagoons.								
	. 2	Heron's Head Park - India Basin	2500				4/1			**12**
		5 For conditions when oil is likely to enter India Basin, such as easterly winds, deflect oil away from site to south shore.								
2-354 .	1	Islais Creek - Pier 94 Saltmarsh	1000	50		50	1/1			
		5,8 Exclude oil from entering inlet and protect site from oil.								
2-361 .	1	Airport Mudflat	8200				4/4		4 shallow draft boomboats	**25-30**
		5 Exclude oil from entering slough openings and cove.								
2-362 .	1	Belmont Slough	4000		TB 200		3/0	1 SPS		**14**
		5 Prevent oil fom entering Belmont Slough.								
	. 2	Belmont Slough	6000				2/3			**16**
		8 Protective booming of bayfront tidal marsh								
2-363 .	1	Steinberger Slough	3500		TB 500		2/1	1 SPS	Bboat: very shallow draft	**10-15**
		5 Exclude oil from entering/leaving Steinberger Slough								
2-364 .	1	Bair Island		200		200	1/1		very shallow Bboat	**5**
		5 Exclude oil from entering Bair Island: close openings to interior.								
	. 2	Bair Island			4000 TBB		2/1		Very shallow water Bboat	
		8 Protective booming of exposed marsh frontage.								
2-365 .	1	Redwood Creek	3000	8000	4000 TBB	2000	6/3	1 sfs	very shallow Bboats	**25-30**
		7,8 Deflect past, Deflect to collection, Protective boom shoreline.								
2-366 .	1	Corkscrew Slough		2000		2000	2/0		very shallow Bboats	**3-6**
		5 Exclude oil from entering Slough.								
2-367 .	1	Greco Island/Ravenswood Slough	8000	2000	10000TBB	2000	6/10	0	very shallow Bboats	**35-45**
		5,8 exclude oil from entering various sloughs, protective booming of bay frontage.								

PROBABILITY OF OIL REACHING EACH SITE STRATEGY IN GRP 3

GRP 3



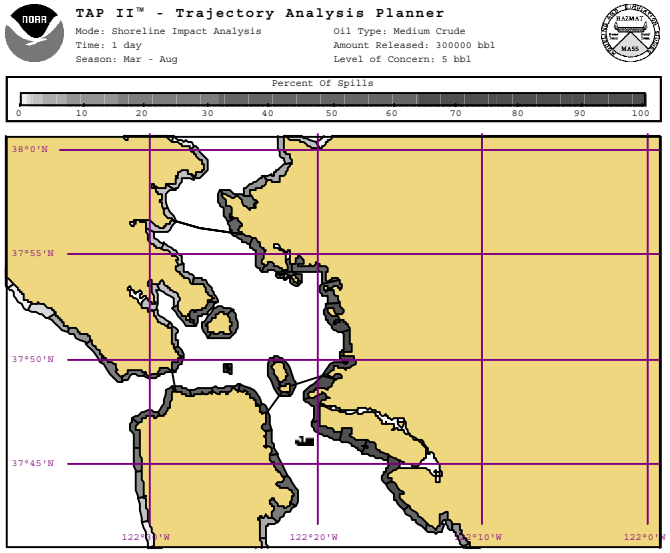
6 hours from start of spill



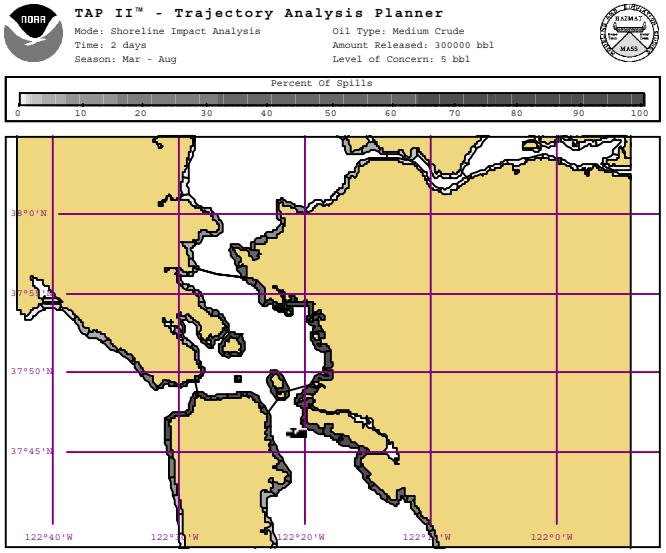
12 hours from start of spill

TAP II Maps for GRP3 Scenario: Spill of 300,000 bbls of crude at Anchorage 9 in the Spring. The shades of grey at each impacted site correspond to a percentage in the legend of the number of spill scenarios (from 500 runs of various wind, tides and currents) that brought more than 5 bbls (= Level Of Concern) of oil to that site in the specified time frame (6 hours or 12 hours).

GRP 3



24 hours from start of spill



48 hours from start of spill

TAP II Maps for GRP3 Scenario: Spill of 300,000 bbls of crude at Anchorage 9 in the Spring. The shades of grey at each impacted site correspond to a percentage in the legend of the number of spill scenarios (from 500 runs of various wind, tides and currents) that brought more than 5 bbls (= Level Of Concern) of oil to that site in the specified time frame (24 hours or 48 hours).

Table of Percent of Spills that bring oil (>5 bbls) to each site from the GRP 3 scenario.

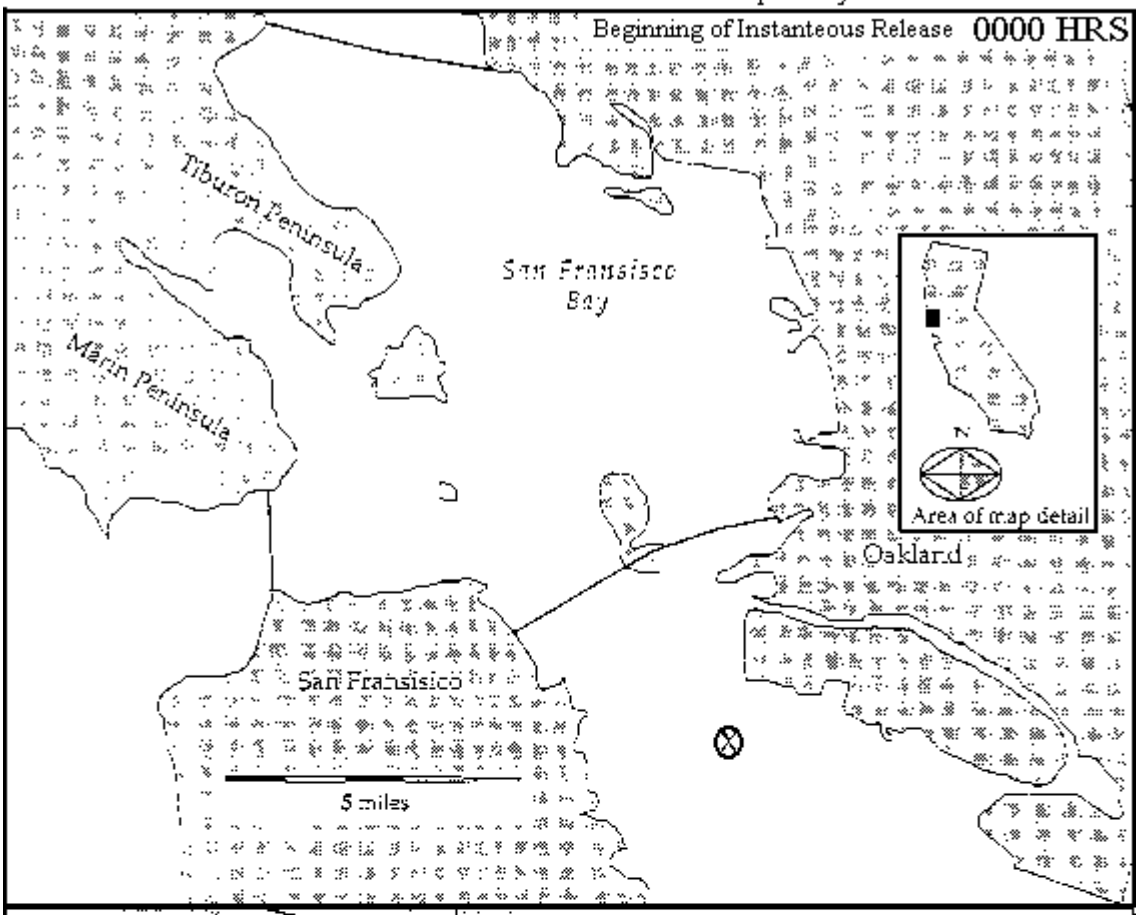
ACP SITE#	ES	SITENAME	LAT W (Deg. Min.)	LONG W (Deg. Min.)	6 HOURS (% prob)	12 HOURS (% prob)	24 HOURS (% prob)
2-351	A	Yerba Buena Island	37 48	122 22	62	86	95
2-353	B/A	Herron's Head Park - India Basin	37 44.3	122 22.5	47	54	58
2-354	B/A	Islais Creek - Pier 94 Saltmarsh	37 44.3	122 22.5	46	54	56
2-400	C	San Francisco Waterfront	37 46	122 23	45	61	69
2-402	B	Alcatraz Island	37 50	122 25	38	56	76
2-302	C	Alameda Eelgrass Beds	37 45	122 16	35	79	95
2-402	B	Alcatraz Island	37 50	122 25	35	53	75
2-458	A	Emeryville Lagoon/Mudflats	37 50	122 29	27	66	86
2-352	B	South Basin, Hunters Point	37 43	122 23	24	27	29
2-151	C	Pt. Doable to Lime Point	37 49	122 30	22	32	55
2-401	B	Pier 39	37 48	122 22	19	40	57
2-153	A	Land's End	37 47	122 30	19	28	51
2-154	A	Cliff House and Seal Rocks	37 47	122 31	15	23	44
2-303	A	San Leandro Bay	37 45	122 13	12	51	82
2-423	C	Angel Island	37 54	122 27	12	34	60
2-304	C	Bay Farm Island Eelgrass Beds	37 44	122 15.5	11	36	64
2-457	A	Berkeley Eelgrass Beds	37 51	122 19	8.6	29	73
2-150	C	Point Bonita and Bonita Cove	37 49	122 31	7.6	16	26
2-148	A	Rodeo Lagoon	37 50	122 32	6	12	22
2-149	A	Bird Island	37 49	122 32	6	12	22
2-155	A	Ocean Beach/Fort Funston	37 45	122 30	4.6	12	23
2-305	A	San Lorenzo Creek to Johnson Landing	37 29	122 02	0.4	3.6	21
2-422	B	Keil Cove	37 55	122 27	0.04	15	24
2-421	C	Tiburon Penninsula	37 54	122 27	0.01	22	37
2-420	A	Richardson Bay Marshes	36 56	122 30	0.01	4.6	10
2-420	A	Richardson Bay Marshes	36 56	122 30	0.01	19	29
2-456	A	Albany Marsh	37 54	122 19		9.4	53
2-453	A	Brook's Island	37 54	122 21.5		21	55
2-455	C	Santa Fe Channel	37 55	122 22		17	48

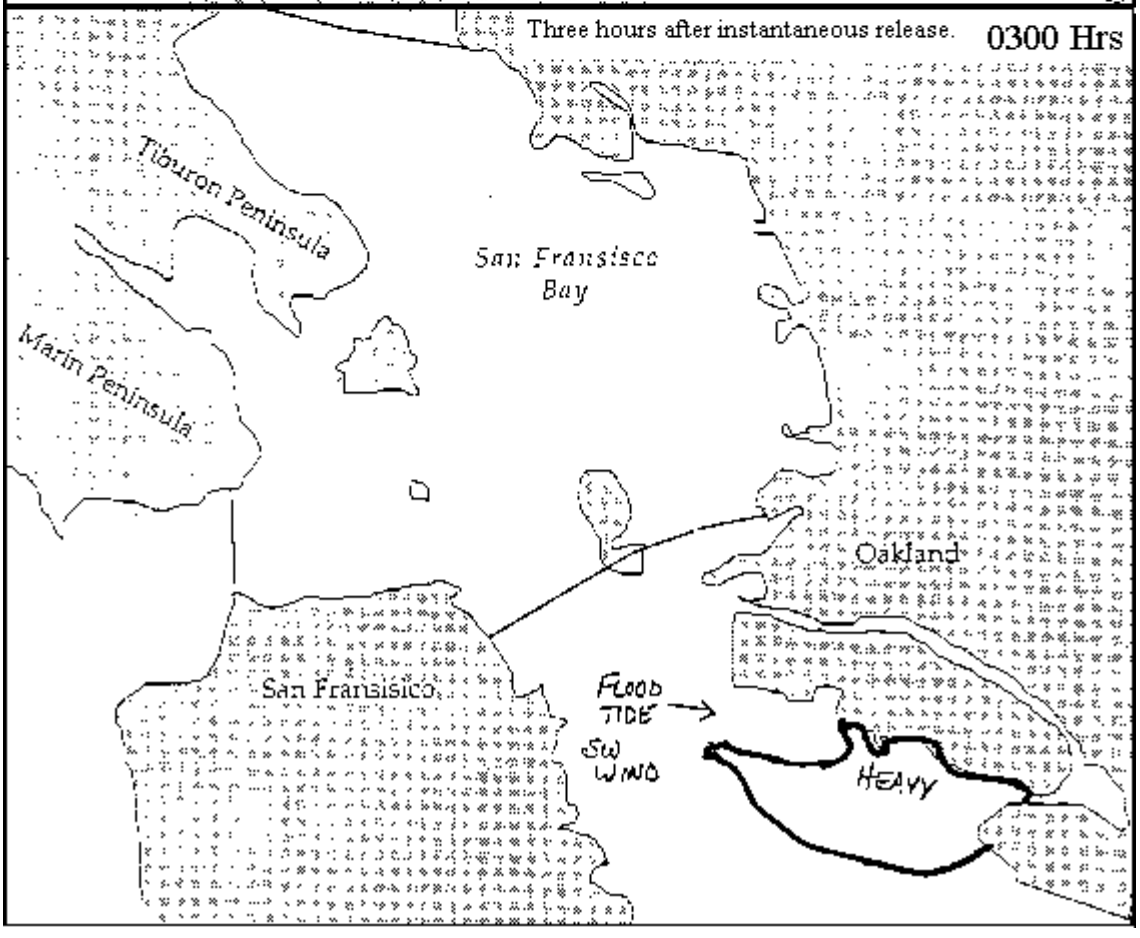
2-451	A	Castro Rocks	37 50	122 24		17	43
2-452	A	Richmond Eelgrass Beds	37 58	122 24		15	37
2-424	B	Paradise Cove	37 54	122 27		15	24
2-501	A	Castro Creek and Marshes	37 58	122 24		11	28
2-454	A	Richmond Inner Harbor/Hoffman Marsh	37 54.5	122 20		4.4	38
2-506	A	San Pablo Bay Eelgrass Bed	37 59	122 25		2.8	6.8
2-551	A	McNear's Beach Marshes	38 00	122 27		2.8	6.8
2-427	A	Marin Islands	37 58	122 28		1.6	3.6
2-502	A	San Pablo Creek Marshes	37 58.5	122 23			4.2
2-503	A	Pinole Pt. Marshes-South	37 59	122 21.6			4
2-504	A	Pinole Pt. Marshes - North	38 05	122 21			2.6
2-425	A	Corte Madera Marshes	38 56	122 30			1.8
2-426	A	San Rafael Creek Marsh	37 58	122 29			1.8
2-583	A	Napa River Marshes	38 12	122 19			0.4
2-156	A	Thornton Beach State Park	37 42	122 30			0.2

Anchorage No. 9 Spill Scenario Map

12,000 Barrels of Alaska North Slope Crude

Use Only as a General Reference.
Oil may move beyond map boundaries.
Prepared by NOAA





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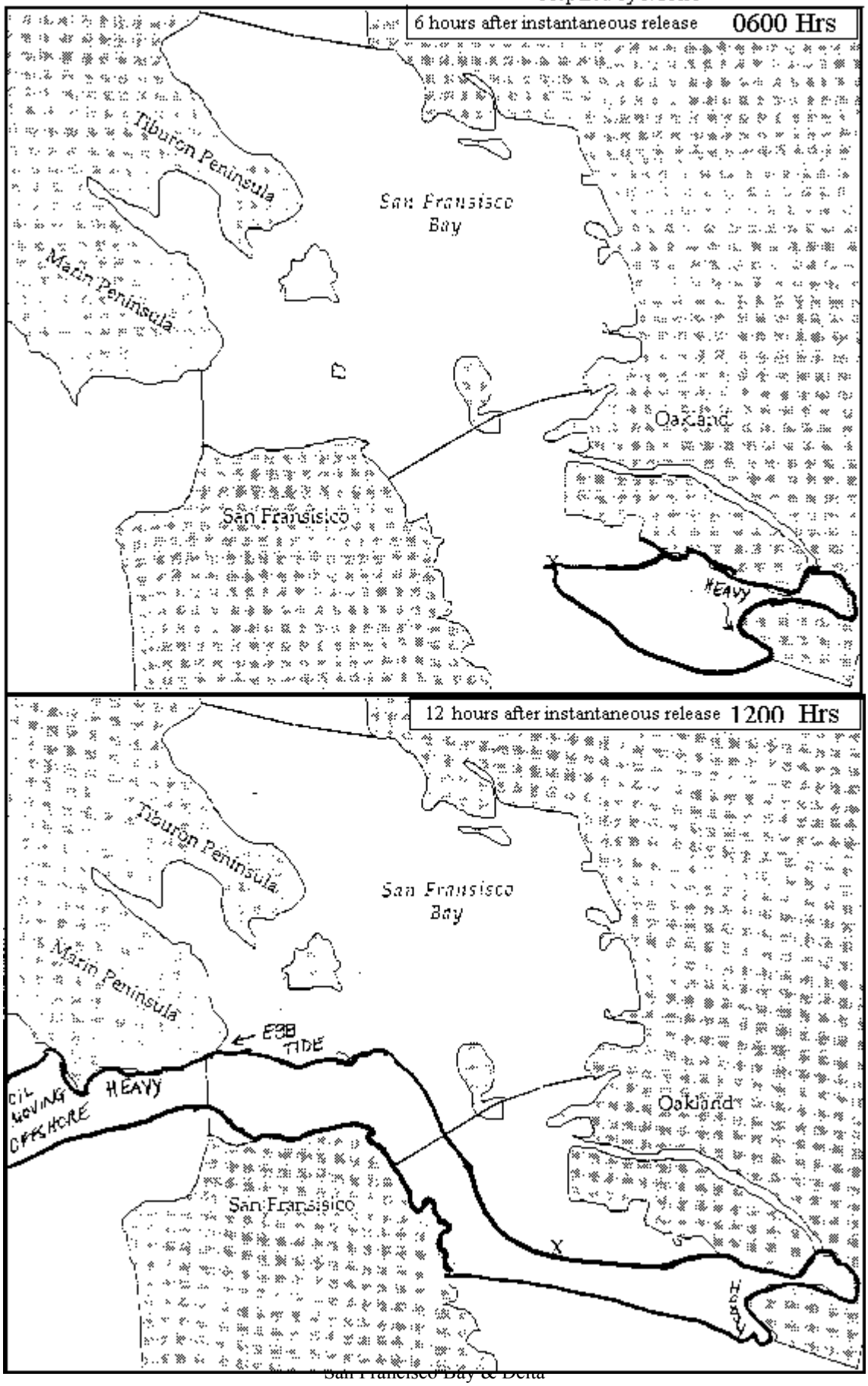

San Francisco Bay & Delta

9973-GRP3-10

Anchorage No. 9 Spill Scenario Map

12,000 Barrels of Alaska North Slope Crude

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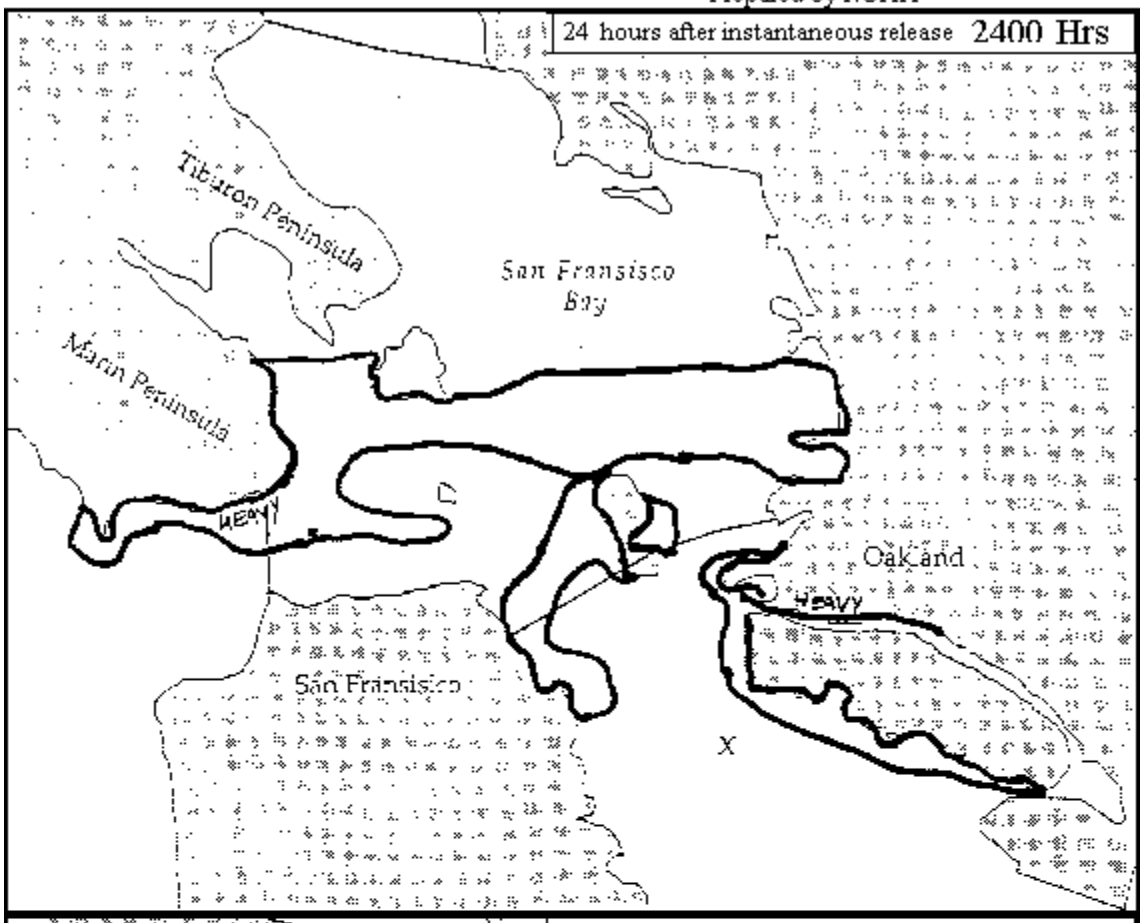
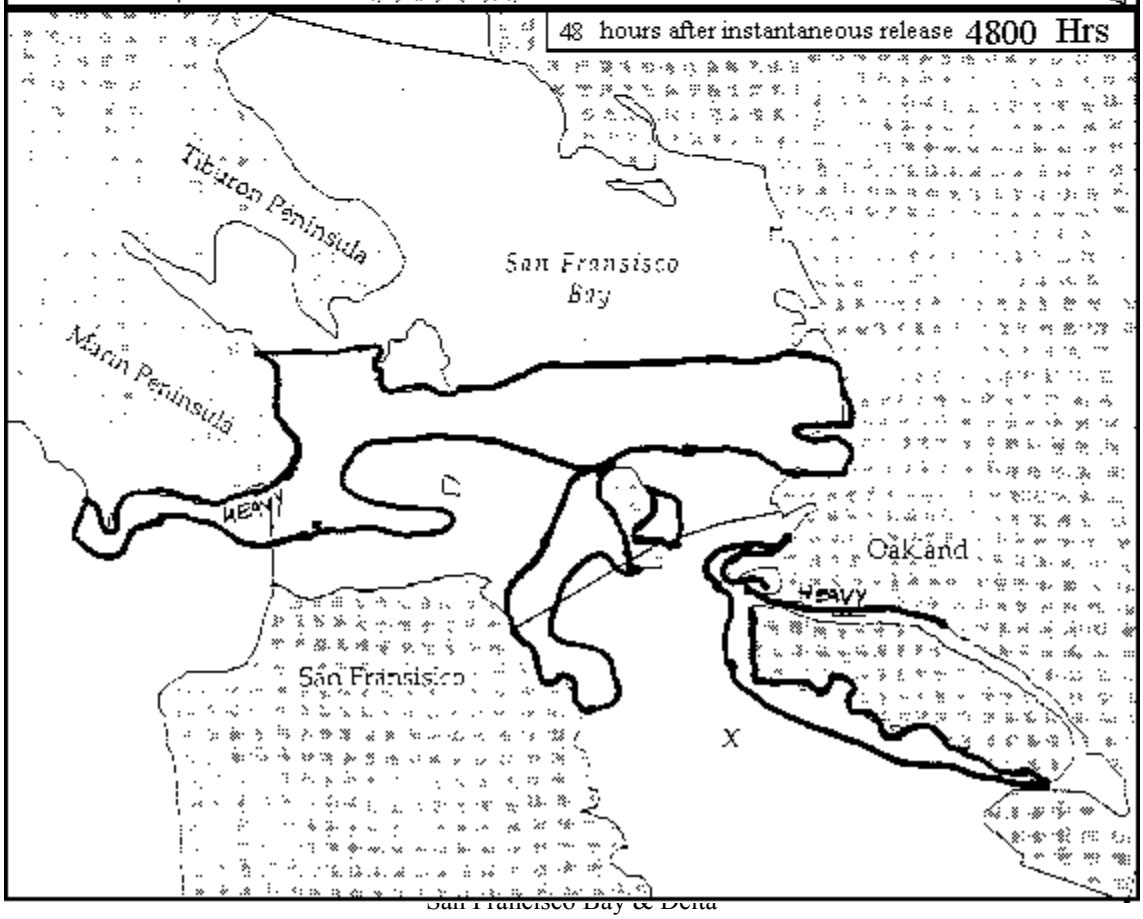
Oil may move beyond map boundaries.
Prepared by NOAA





Anchorage No. 9 Spill Scenario Map

12,000 Barrels of Alaska North Slope Crude

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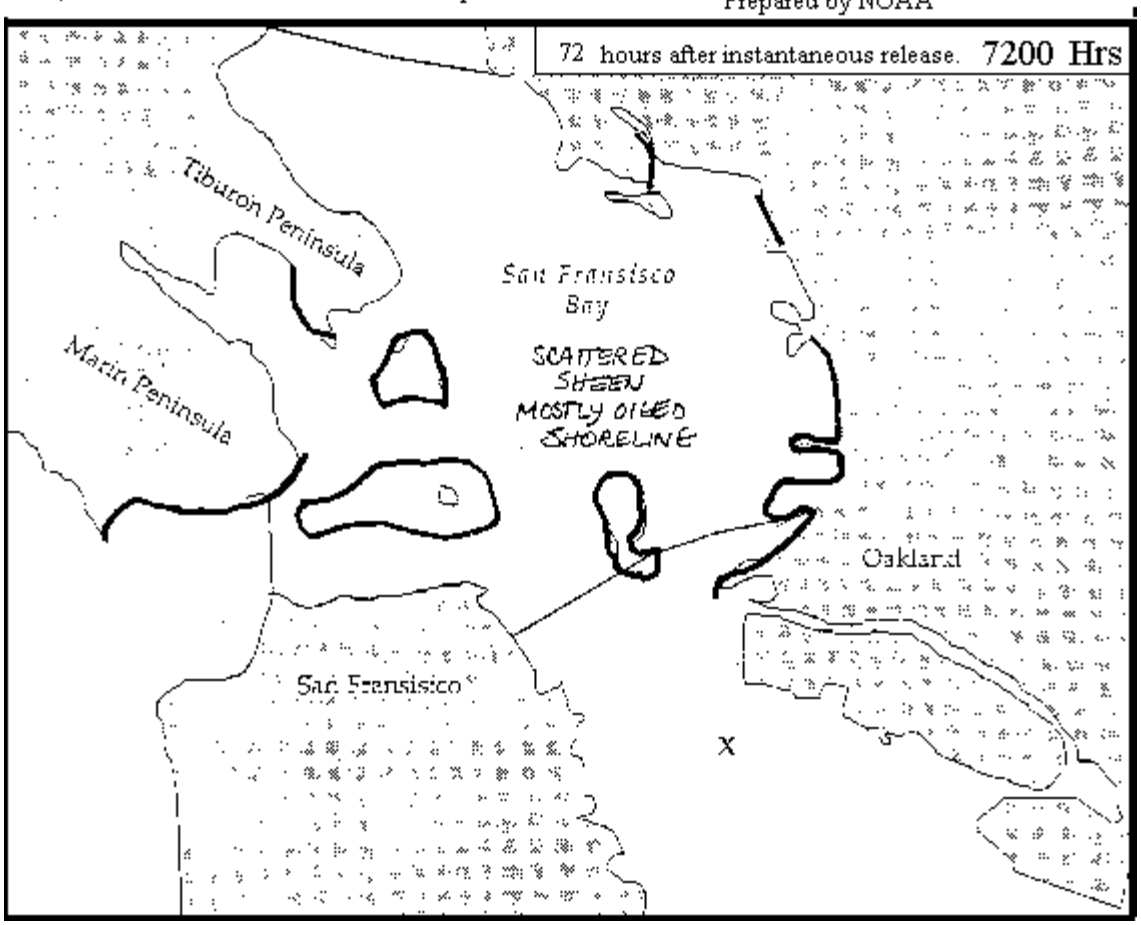

San Francisco Bay & Delta
9973-GRP3-12

RESPONSE PRIORITIES FOR ANCHORAGE 9 SCENARIO* GRP 3

TIDE AND WIND AT TIME OF INSTANEOUS DISCHARGE	TIME PERIOD OILED (HOURS)	PRIORITY	SITE ID 1996	1998	SITE DESCRIPTION
WINTER SCENARIO	0.00	1			Spill Site Containment
12,000 bbl ANS Crude	0.00	2			On-Water Recovery
Max flood	0-3	3	234	302	Alameda Eelgrass Beds
Wind: 20+ kts. SW to W	3-6	4	235	303	San Leandro Bay
Runoff Unknown	6-12	5	254	352	South Basin, Hunters Point
	6-12	6	256	401	Pier 39
	6-12	7	257	402	Alcatraz Island
	6-12	8	049	151	Point Diablo to Lime Pt.
	6-12	9	048	150	Point Bonita and Cove
	6-12	10	047	149	Bird Island
	6-12	11	046	148	Rodeo Lagoon
	12-24	12	255	351	Yerba Buena Island
	12-24	13	232	458	Emeryville Lagoon/Mudflats
	12-24	14	233	457	Berkely Eelgrass Beds
	24-48	15	045	147	Redwood Creek/Big Lagoon/ Muir Beach
	24-48	16	201	420	Richardson Bay Marshes
	24-48	17	260	456	Albany Marsh
	24-48	18	228	454	Richmond Inner Harbor/ Hoffman Marsh
	24-48	19	261	453	Brooks Island

* Based on the 1995 ACP trajectory

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Alameda Eelgrass Beds - Site Summary 2-302 -C

County: Alameda **GRP: 3** **Latitude** 37 45 N **Longitude** 122 16 W
USGS: Oakland West **OSPR Map:** **Last ACP Update 01/01/2000**

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

The bed extends from near the entrance to Ballena Bay to the southerly extension of Park Street in Alameda. The eelgrass beds south of the island of Alameda total about 30 acres. The densest portion of the bed is near Ballena Bay and becomes more sparse along a sand bar running to the east about 150 yards off shore. The beds are in 8 to 10 feet of water and would not necessarily be exposed to oil on all low low tides.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

Eelgrass beds are of concern thoughout the year but particularly November to April during herring spawning.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

Oil readily sticks to eelgrass. The beds are an important spawning substrate for herring from November through April, and eelgrass is the sole food source for Black brant during this time.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
BTL	Diane Watters	Calif Dept of Fish and Game	(650) 688-6357	

2-302 -C Alameda Eelgrass Beds - Site Strategy

County: Alameda **CHART** 18649/18650 Entrance to SF Bay Latitude 37 45 N Longitude 122 16 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

The bed extends from near the entrance to Ballena Bay to the southerly extension of Park Street in Alameda.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Water is relatively shallow.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

The concern is that oil will readily stick to any eelgrass blades which come in contact with the oil. The oil is disruptive to the eelgrass and would be damaging to any herring eggs spawned during the herring spawning season: November to March. The strategy is to deflect the oil past this area to collection setup to the east in San Leandro Channel.

SITE STRATEGIES

Strategy 2-302.1

(USCG Strategic Objective: **7**) **Dates:** SISRS 05/18/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Deflect oil past eelgrass bed and toward collection / protection deployments of San Leandro Bay: 2-303.

Technique Details Check here means **" No strategy diagram":** **( )** Check here means **"Contact CCC": ( )**

Cascade deflection boom from the mouth of Ballena Bay at a southeasterly angle to direct oil past the eelgrass beds and the southern side of Alameda Island toward the San Leandro Bay channel.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-302.1	3000			12/22+/danforth		2 / 0			6	twice daily checks.	7

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

This site is accessible only by water. The beds are about 200 yards from Alameda marina mouth. To drive to the nearest beach, follow the signs to Alameda from I-880. Exit on Webster and continue to the terminus of Webster at Crown Beach: right (west) on Central to 4th street to Ballena Bay and Ballena Isle Marina or left to 8th street which becomes Shore Line Drive.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ready access to the nearby shoreline

WATER LOGISTICS:

Access limitations: depth, obstructions: none known

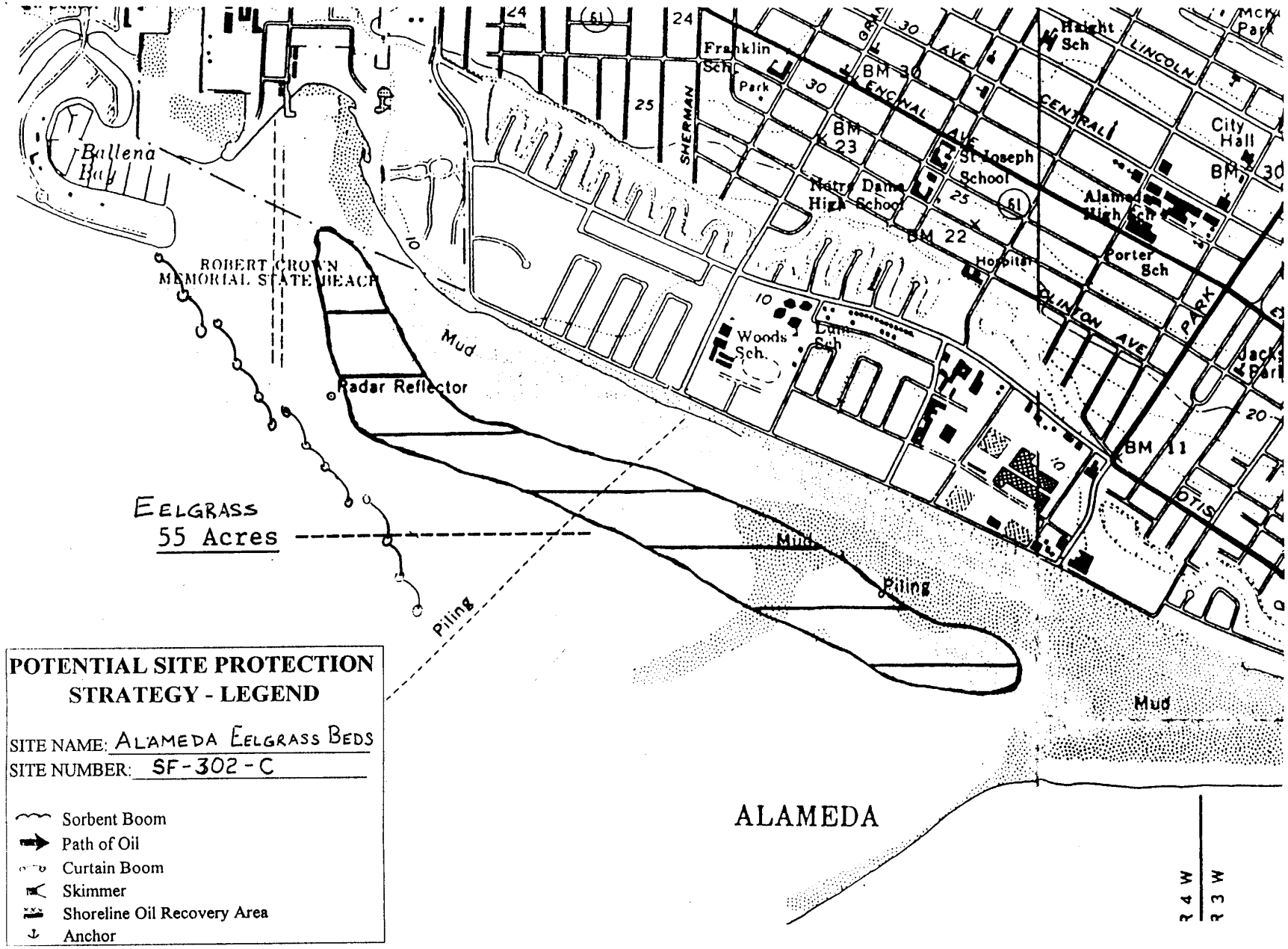
Boat Launching, Loading, Docking and Services Available: Public launching at the end of Lincoln off of Central. Docking available at Ballena Isle Marina just to the west.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The Ballena Isle Marina near by is the most convenient boat facility to support this operation. Crown Beach (EBRP) may be useful for staging. The Alameda Ferry Slip on Bay Farm Island to the south is also a good site to stage boom and support equipment. Also, San Leandro Harbor, just south of the Oakland Airport is a small boat harbor accommodating 500 boats with a minimum of 15 guest slips. The channel leading into the harbor is dredged and has a controlling depth of 5-6 ft. It is marked by day beacons and two lights, and the northern most light has a fog signal. There is a yacht club and the harbor master's office is on the southwest side.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS



POTENTIAL SITE PROTECTION STRATEGY - LEGEND

SITE NAME: ALAMEDA EELGRASS BEDS
SITE NUMBER: SF-302-C

- Sorbent Boom
- Path of Oil
- Curtain Boom
- Skimmer
- Shoreline Oil Recovery Area
- Anchor

San Francisco Bay & Delta
9973-GRP3-17

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San Leandro Bay - Site Summary 2-303 -A

County: Alameda **GRP:** **Latitude** 37 45 N **Longitude** 122 13 W
USGS: Oakland E.,Hntrs Point,San Leandro **OSPR Map:** **Last ACP Update** **07/01/96**

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**

This site includes all of San Leando Bay and the San Leandro Channel, including Elsie Roemer Bird Sanctuary is located at the southeast end of Crown Beach on Alameda, west of the Alameda-Bay Farm Island bridge. This shallow bay between Alameda and Bay Farm Islands has extensive mudflats and well developed saltmarsh, including the 50 acre Arrowhead Marsh at the south end.

The west and south margins are part of San Leandro Bay Regional Shoreline - EBRP. The Oakland Estuary feeds into the north end, and San Leandro Channel feeds in from the west. San Leandro Creek empties to the bay at its southeast corner. The Airport Marina is along the southwest margin.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**

The saltmarshes, mudflats, and bird sanctuary are an "A" priority all year. Several Special Status Species including the endangered California clapper rail, the endangered salt marsh harvest mouse, and rare sensitive plants are present in the 50 acre Arrowhead Marsh.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

The main habitat of concern is the 50 acre Arrowhead Marsh. There are also chord grass marshes along the margins. There are extensive mudflats. The gravelly substrate along the southwest margin support extensive cockle beds. All these habitats are very sensitive to oiling and cleanup is very impractical.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

All of the marshes, mudflats, and shallow water areas within San Leandro Bay are habitat for waterfowl, wading birds, and shorebirds, and the Elsie Roemer Bird Sanctuary is located at the southeast end of Crown Beach on Alameda, west of the Alameda-Bay Farm Island bridge. The endangered California clapper rail breeds here. Brown pelican and least tern forage here.

The endangered saltmarsh harvest mouse is also populates these marshes.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

There are probably historic and cultural sites present. For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
ELO	Dispatch EBRP	East Bay Regional Park District	(510) 792-0222	

2-303 -A San Leandro Bay - Site Strategy

County: Alameda **CHART** 18649/18650 Entrance to SF Bay Latitude 37 45 N Longitude 122 13 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site
This site includes all of San Leando Bay and the San Leandro Channel, including Elsie Roemer Bird Sanctuary is located at the southeast end of Crown Beach on Alameda, west of the Alameda-Bay Farm Island bridge.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Beware of shallows.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
The main concern are the very sensitive marshes and mudflats here, which are is almost impossible to cleanup. The intention is to prevent oil from entering by diverting it to collection sites on the north shore of Bay Farm Island near the bridge. Avoid disturbing or trampling marsh vegetation and don't trample oil into the mud.

SITE STRATEGIES

Strategy 2-303.1

(USCG Strategic Objective: **5,6**) **Dates:** SISRS 07/01/1997 Approved last tested ACP date 07/01/1997

Objective or Prevention Condition
Direct oil away from Alameda shore to shoreside collection at Bay Farm Island Bridge.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**
Deploy deflection boom across San Leandro Channel using both intertidal barrier boom and harbor boom to move oil to collection areas and exclude oil from San Leandro Bay marshes.

Flood tide - Using 1200 ft. of harbor boom and 250 ft of intertidal barrier boom (or swamp boom) connected together, place boom across channel at approximately a 45 deg. Angle. Place intertidal barrier boom on north side of channel across mudflat, extending harbor boom across channel to form a collection pocket on south side of channel at inlet next to the Alameda/Bay Farm Island bridge.

Ebb Tide:- If little to no oil is inside San Leandro Bay; flood tide harbor boom can remain in place. If strong currents exist the boom may be opened, using the boom to line the marshes on either side of the channel, allowing oil to move out of the bay. If a significant amount of oil is present inside the bay; leave existing flood tide harbor boom in place, collect oil on the north bank.

A secondary line of defense in the San Leandro Channel may be required. This could involve sorbent boom behind harbor boom or additional harbor boom and skimmers working near the bridge. Specific equipment requirements will be determined based on oil, current, and weather conditions during the incident.

Strategy 2-303.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 07/01/1997 Approved last tested ACP date 07/01/1997

Objective or Prevention Condition
Divert oil away from Elsie Romer Bird Sanctuary to collection in the San Leandro Channel.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**
Deploy 1500 ft. of harbor boom from the Park St. jetty on Alameda. Depending on weather and spill conditions, this boom can be used to either deflect oil away from the marsh east of jetty and into channel, or to deflect oil to the sandy beach into a collection area. SPS skimmer in San Leandro Channel may be replaced by portable skimming head operated from shore with Vac Truck or other shore

Strategy 2-303.3

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/01/1997 Approved last tested ACP date 07/01/1997

Objective or Prevention Condition
Exclude oil from entering the bay via Oakland Estuary.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**
Protective measures on the north channel (Oakland Estuary) entrance to San Leandro Bay may also be necessary depending on the size and location of the spill. Spills in SF Bay should be confronted in the Oakland Inner Harbor to prevent oiling of the inner harbor and San Leandro Bay. Spills in the harbor should be confronted in the Park Street Bridge Reach. Currents in the Park St. Bridge Reach are very fast. Specific strategies have not been developed for these locations, although extensive use and deployment of several thousand feet of harbor boom, boom boats, skimmers and vacuum trucks may be required. Diagonal booming will be necessary to move oil out of swift water to slower shoreside collection pockets and eddies.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-303.1	1200	300	250 tide	5/22+/daforth & chain	200	2/1	portable &VT	1 Bboat: very shallow draft	9 (30 support	2	5,6
2-303.2	1500			4/22+/danforth		2/1	sps	1	8	shore resupport	7
2-303.3	3000			10/22+/danforth & chain	100	2/1	SPS or mobil	1			5

LOGISTICS

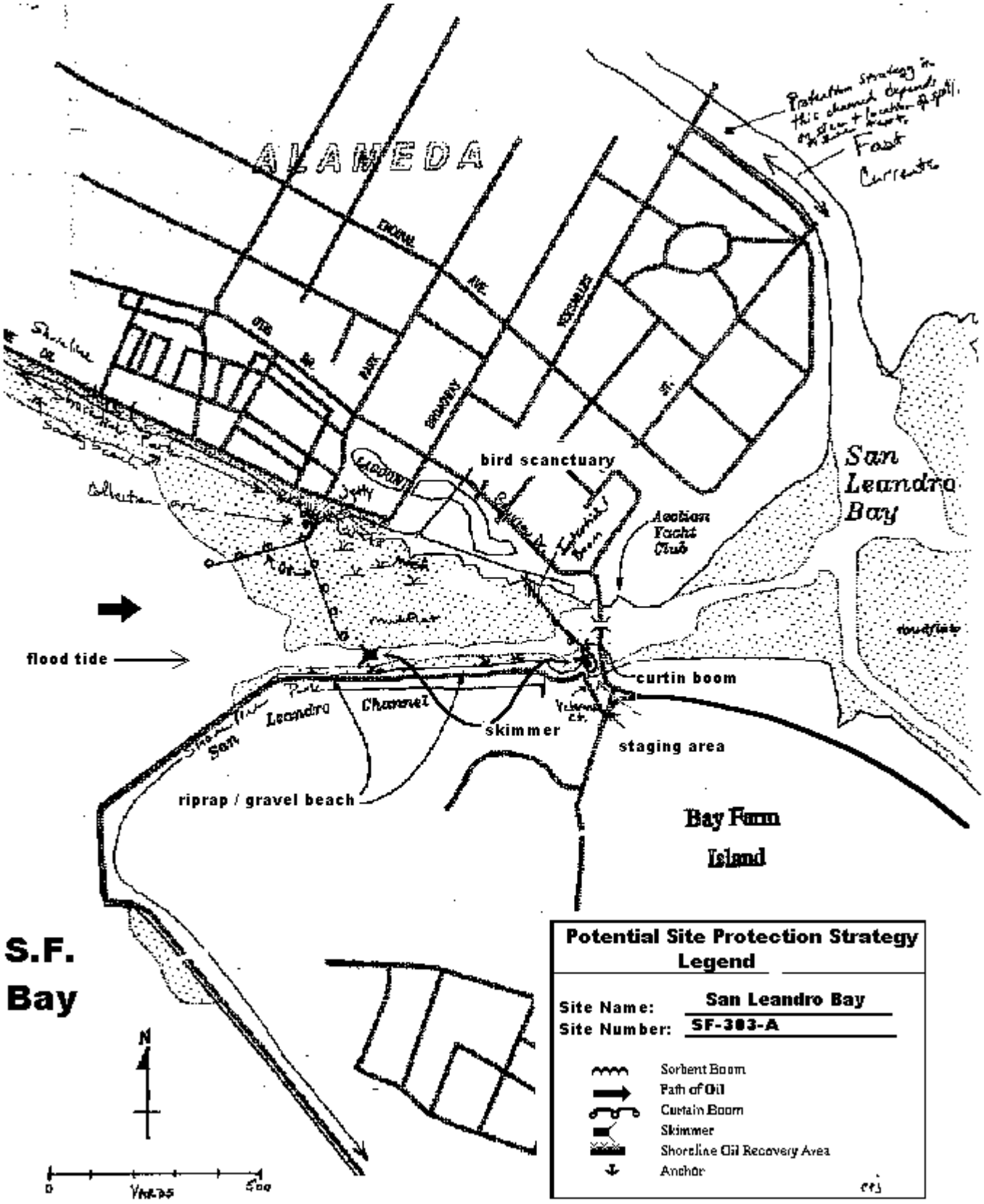
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
By vehicle, exit I-880 at Hegenberger Rd and proceed bayward (toward airport). Turn right (north) on Doolittle Dr (hwy 61) which runs along the west side of San Leadro Bay and crosses the San Leandro Channel. By boat, from the tip of Alameda Island, the bay is at the east end of the Island and may be approached via the Oakland Estuary or, preferably on the south side of the island, via the San Leandro

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
good on west shore

WATER LOGISTICS:
Access limitations: depth, obstructions: exceedingly shallow.
Boat Launching, Loading, Docking and Services Available: There are launches in Oakland Estuary and at the southwest of Alameda Island at the end of Lincoln St. All services in Oakland Estuary.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Good staging at the foot of Bay Farm Bridge. Also at Crown Park, San Leandro Regional Shoreline, and Bay Farm Ferry Landing. Field Post at USCG, Alameda. Foss Environmental Hq is at the west end of Alameda.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone


ALAMEDA
Protection strategy in this channel depends on flow + location of spill.
Fast Currents
bird scanctuary
San Leandro Bay
Aeolian Yacht Club
flood tide
curtin boom
skimmer
staging area
riprap / gravel beach
Bay Farm Island
S.F. Bay
N
0
Yards
500
Potential Site Protection Strategy Legend
Site Name: San Leandro Bay
Site Number: SF-303-A
Sorbent Boom
Path of Oil
Curtain Boom
Skimmer
Shoreline Oil Recovery Area
Anchor

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Bay Farm Island Eelgrass Beds - Site Summary 2-304 -C

County: Alameda **GRP:** 3,4 **Latitude** 37 44 N **Longitude** 122 15.5 W
USGS: Hunters Point / San Leandro **OSPR Map:** 154 155 **Last ACP** 1/01/1998

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site extends from the tip of Bay Farm Island at San Leandro Channel (Ferry landing) to the next point south. This reach is a shallow cove with a rip-rap margin and shallow water of up to 15' deep. It is a natural collection area for debris. The eel grass beds begin about 50' off the shore and are about 200 yards long.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

This eelgrass bed has A-level protection priority at all times. Eelgrass is a prime herring spawning habitat from November though February.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

The shallow cove is habitat for eelgrass and all associated species. Oil readily sticks to the silicacious surface of eelgrass. Eelgrass is a favored substrate for herring spawning November through April. It is also the sole food source for black brant during this same period.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

There are probably historic and cultural sites present. For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
EL	City of Alameda, PD	Alameda Police -non emergency	(510) 748-4508	
TB	Diane Watters	Calif Dept of Fish and Game	(650) 688-6357	
ELBO	City of Alameda, Parks	Dept Parks and Recreation	(510) 748-4565	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-304 -C Bay Farm Island Eelgrass Beds - Site Strategy

County: Alameda **CHART** 18649/18650 Entrance to SF Bay Latitude 37 44 N Longitude 122 15.5 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site
This site extends from the tip of Bay Farm Island at San Leandro Channel (Ferry landing) to the next point south.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Riprap poses slip, trip and fall hazards. Vessels beware of shallows at margins.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
Primary concern is oiling of eelgrass and its impacts on wildlife. This is a natural collection area for flotsam and can function as an oil collection site. Oil may become imbedded in riprap.

SITE STRATEGIES

Strategy 2-304.1

(USCG Strategic Objective: **7**) **Dates:** SISRS 10/05/1997 Approved last tested ACP date 09/01/1998

Objective or Prevention Condition
Minimize oil moving into the area by positioning a deflection boom from the runway point to diver oil borne on currents past.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**
This strategy is most appropriate if very low tides are likely to expose eelgrass. Deploy 1000'+ from the point at the end of the runway parallel to the shoreline to deflect oil past the pocket of the cove. This strategy will require heavy anchoring since current is very strong (2+knt at point); previous deployment attempts have failed if not properly anchored.

Strategy 2-304.2

(USCG Strategic Objective: **6**) **Dates:** SISRS 10/05/1997 Approved last tested ACP date 01/01/1998

Objective or Prevention Condition
Maximize oil capture at this locale with deflection to shore skimming unit.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**
a) For ebb tide: deploy 1000'8X8+ Hboom at an angle to direct oil to shore about 200'south of ferry landing. Complete with a lined capture and hold pocket (2000'4X4+Hboom). Line shore with 4X4+ and/or sorbent boom to keep oil from imbedding in riprap. Deploy additional 1000'Hboom to cascade oil into collection.

b) For flood tide, skimmer and collection booms will need to be positioned in the pocket of the cove to effect recovery.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-304.1	1000			6/22#+ danforths/ 15'+ chain		1/1				4 PERSONS	continuous tending 2	7
2-304.2	2000	2000		9/22#+/danforth & chain + stakes		2/2	portable & VT	1		8 PERSON	continuous skim/tend	6

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Land access is from I-880: exit at High St, continue south (left) on Doolittle across San Leandro Bay and then continue right (west) on Mecartney Rd bay front, Shoreline Park. By water the site is about a mile southeast from the marina at Robert Crown State Beach.

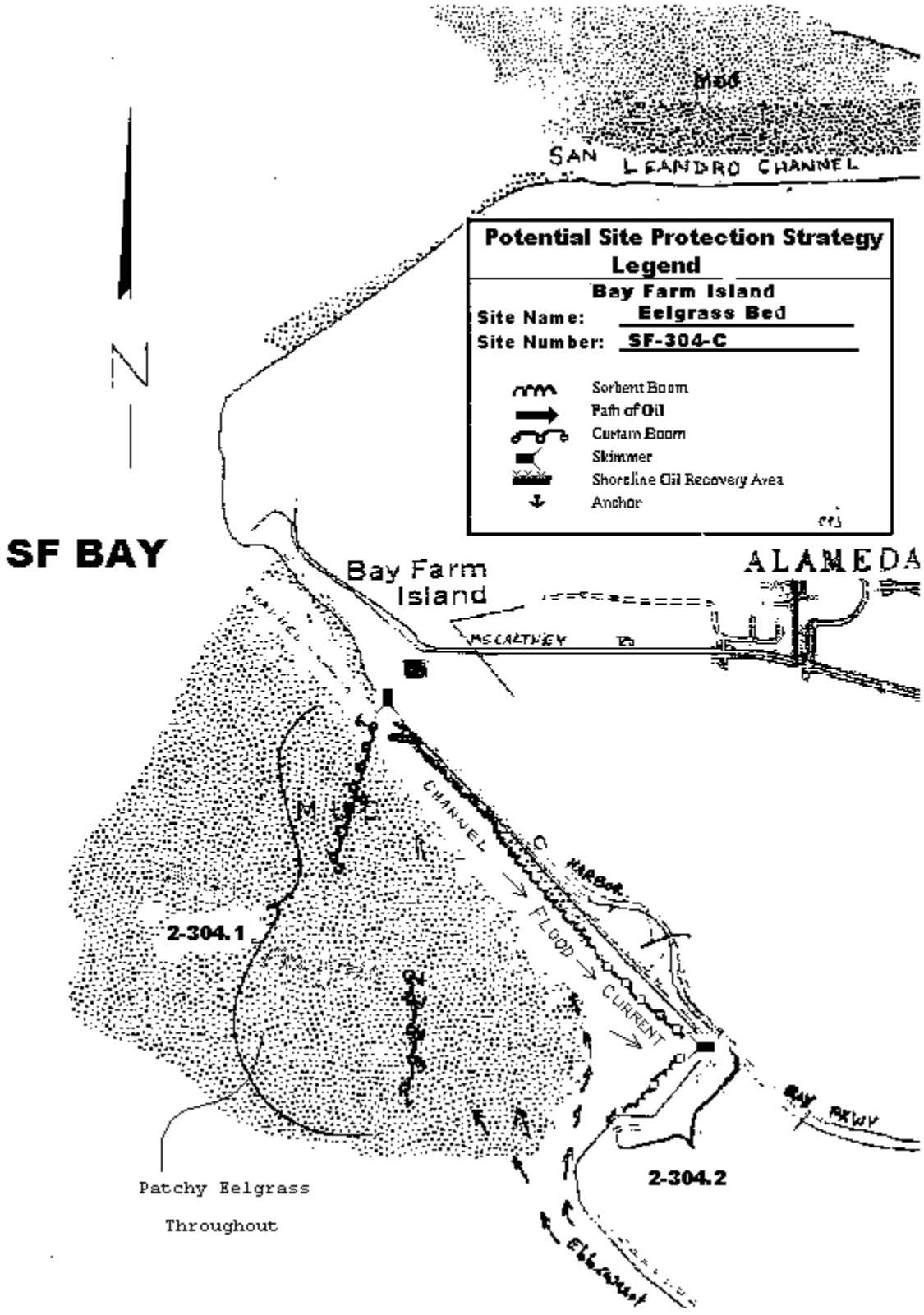
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL

WATER LOGISTICS:
Access limitations: depth, obstructions: GOOD WATER
Boat Launching, Loading, Docking and Services Available: Launch and moorage across at Ballena Isle Marina, Alameda.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Shoreline Park and Crown Beach can provide field local support and as deployment sites. EBRP facilities at Crown Beach, Alameda may serve well as a field post.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


SAN LEANDRO CHANNEL
Potential Site Protection Strategy Legend
Bay Farm Island
Site Name: Eelgrass Bed
Site Number: SF-304-C
Sorbent Boom
Path of Oil
Curtain Boom
Skimmer
Shoreline Oil Recovery Area
Anchor
N
SF BAY
Bay Farm Island
ALAMEDA
MCCARTHEY
CHANNEL
HARBOR
FLOOD
CURRENT
2-304.1
2-304.2
Patchy Eelgrass
Throughout

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San Lorenzo Creek to Johnson Landing - Site Summary 2-305 -A

County: Alameda **GRP:** 3 **Latitude** 3729.0 N **Longitude** 12202.0 W
USGS: San Leandro **OSPR Map:** 158-160 **Last ACP Update: 07/01/96**

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

A large contiguous section of marsh located along the east side of south San Francisco Bay and bounded on the northwest by the San Leandro Marina, the northeast by the Southern Pacific Railroad, on the southeast by highway 92 and on the southwest by San Francisco Bay. The site consists of a series of four separate salt marshes running three miles along the east bay shoreline from the mouth of San Lorenzo Creek to Johnson Landing. The largest of these and highest priority is approximately 200 acres and located just north of Johnson Landning. It is partially protected by levees with two openings to the Bay of 1000 and 500 feet in length. The other three smaller marshes are not protected by any levees.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The site is an "A" priority all year.

RESOURCES AT RISK

HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)

The endangered salt marsh harvest mouse, (Reithrodontomys raviventris) and California least tern (Sterna antillarum browni) are known to occur in the area. The California clapper rail (Rallus longirostris obsoletus) may occur in the marshes. The area is heavily used by migratory waterfowl.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

Ohlone cultural sites are nearby. For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
E	Mark Taylor	East Bay Regional Park	(510) 783-1066	
	Leigh Jordan	Office of Historic Preservaton	(707) 664-2494	
	Janet Hanson	San Francisco Bird Observatory	(650) 728-5816	
	Valerie Layne	San Francisco Bird Observatory	(650) 728-5816	

2-305 -A San Lorenzo Creek to Johnson Landing - Site Strategy

County: Alameda **CHART** San Francisco Bay, Southern Part Latitude 3729.0 N Longitude 12202.0 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

A large contiguous section of marsh located along the east side of south San Francisco Bay and bounded on the northwest by the San Leandro Marina, the northeast by the Southern Pacific Railroad, on the southeast by highway 92 and on the southwest by San Francisco

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Shallow water, Seas to 3 feet. Soft mud

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Should oil enter the marsh, expect injury and death of marsh vegetation, small mammals, shorebirds and waterfowl.

SITE STRATEGIES

Strategy 2-305.1 (USCG Strategic Objective: **5**) **Dates:** SISRS Approved last tested ACP date

Objective or Prevention Condition

Prevent oil from entering the marsh. Should oil enter the marsh, contain oil to the smallest possible area of marsh.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**

1. Deploy 600 ft. of boom having a minimum freeboard of 4 inches and a minimum draft of 4 inches in the tidal channel on the north side of Oyster Bay Regional Shoreline. Deliver the boom by truck. A john boat and four people will be needed to deploy the boom. Access is through the San Leandro Sewage Treatment Plant at the end of Davis Street. A skimmer and portable storage device may be located here if significant quantities of oil can be accumulated. See diagram 1.
2. Deploy 3,000 ft. of boom from west side of Oyster Bay Regional Shoreline to Oakland International Airport near the southeast end of the runway. This will require a shallow draft boom boat. See diagram 1.
3. Deploy 600 ft. of boom across the mouth of the salt marsh at the southeast corner of Oyster Bay Regional Shoreline, and another 2,000 ft of boom from the southernmost point Oyster Bay Regional Shoreline to Mulford landing near the intersection of Marina Blvd. And North Dike Rd. One boom boat, two john boats and six people will be needed at this site. Angle of boom may be altered to take advantage of wind. Divert oil to an accessible shoreline. A portable skimmer and a vac truck will be needed to recover oil as it accumulates. See diagram 2.
4. Deploy 6,000 ft of boom around the delta formed at the mouth of San Lorenzo Creek. This may require as many as ten john boats and fifty people. The delta is littered with large pieces of drift wood that pose a potential hazard to boats and boom. This is a potential site to test the usefulness of a hovercraft. See diagram 3.
5. Deploy 200 ft. of swamp boom in the mouth of Bockman Channel. This can be accomplished with on john boat and four people. The boom can be delivered by truck. A portable skimmer and a vac truck will be needed to recover oil if sufficient volume accumulates. See diagram 4.
6. Deploy 600 ft of swamp boom at a steep angle across Sulfur Creek. Deploy the boom east of bridge at mouth of creek. Use two john boats and 6 people to deploy the boom. A vac truck my be located here if significant quantities of oil can be accumulated.
7. Deploy 1,500 ft of boom from the point of land extending into the bay at Hayward Landing to the shoreline to the north to protect the pickleweed marsh north of the point. Use 4 john boats and 12 people to implement this task. There is a launch ramp on the north side of the point. Close the six 36 inch open pipes with sandbags. If the flap gates on six 48 inch pipes are stuck open, close them too with sandbags. See diagrams 4 and 5.
8. Deploy 2,000 ft of boom off the breach in the levee south of Mt. Trashmore. Deploy an additional 2,000 ft. of boom from the north end of the breach to the south end of a bridge to the east. Deploy 500 ft. of sorbent boom under the bridge. Use four 4 john boats and 12 people at this site. A vac truck may be located here if significant quantities of oil can be accumulated. See diagram 5.
9. Deploy 600 ft. of boom off the breach in the levee just north of Johnson's landing. Deploy another 500 ft. of boom from the south

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-305.1	15000	4500'		90 - 20 # w/ 20' 1/2" chain each	500'	25/28	portable	3 10,000' 1/2" anchor line, 5 vac	108	yes	5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Hwy 880 to Hayward. Take Winton Ave. exit. Go west on W. Winton Ave to Hayward Regional Shoreline. Launch ramp at San Leandro Marina. Take Highway 880 to San Leandro. Take Marina Blvd. exit. Go west on Marina Blvd. to San Leandro Marina.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
Access for trucks on well maintained, graveled levee roads

WATER LOGISTICS:

Access limitations: depth, obstructions: SHALLOW DRAFT VESSELS <6'

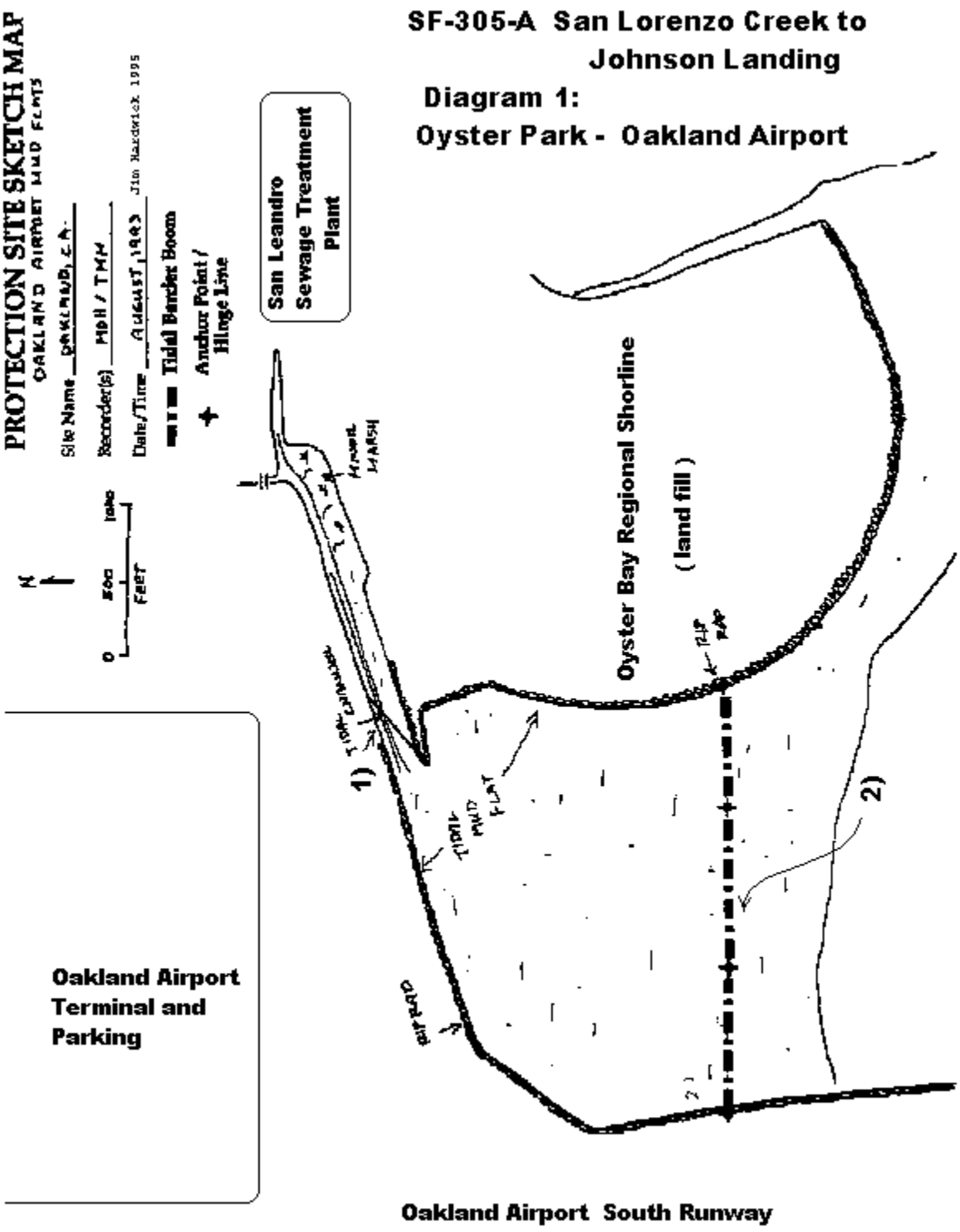
Boat Launching, Loading, Docking and Services Available: Boat launching available at San Leandro Marina. Small skiffs may be launched from levees.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

This is all part of East Bay Regional Park's Hayward Shoreline. A small staging area and access is available at the shoreline office at the west end of W. Winton Ave. Access is also available at the west end of Breakwater Ave. adjacent to Highway 92.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

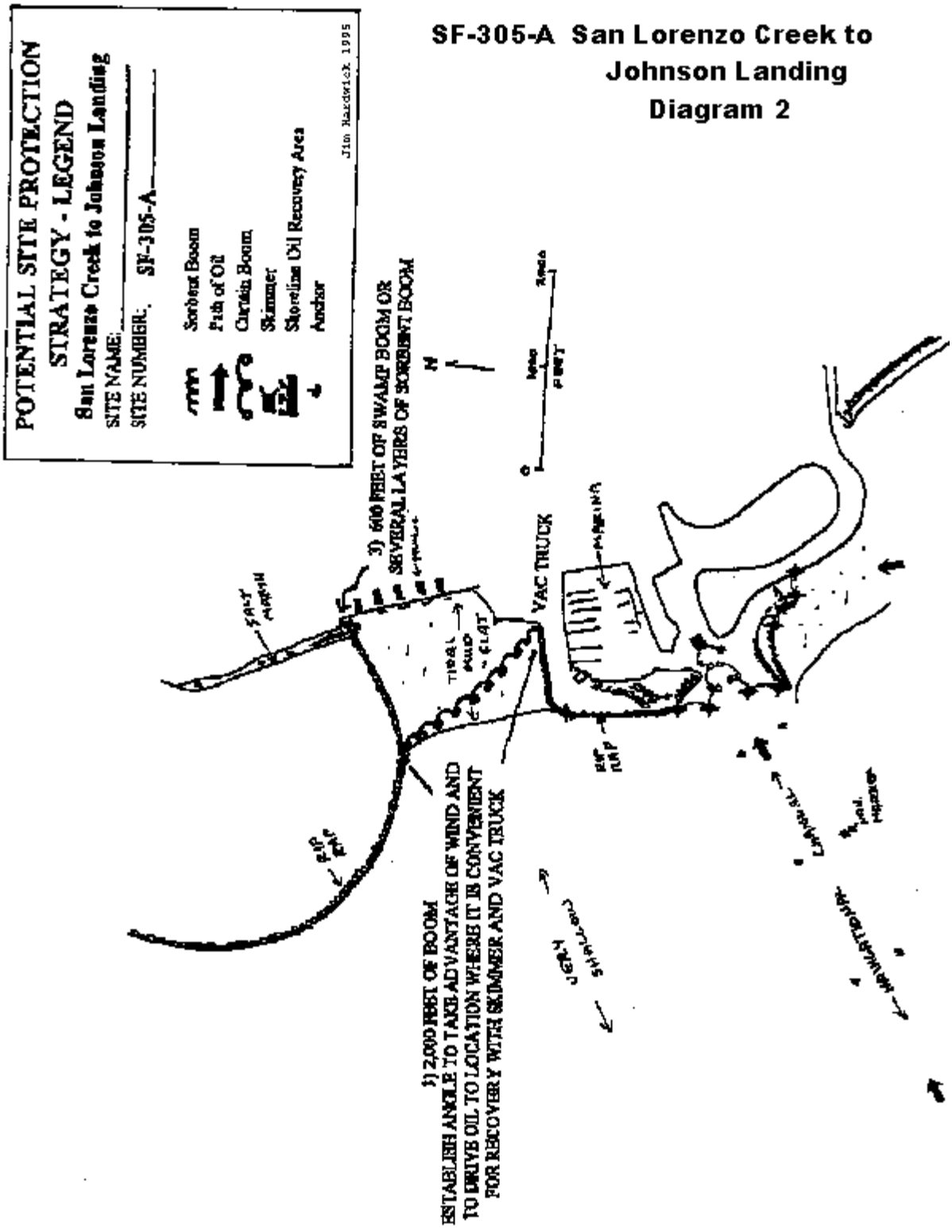


SF-305-A San Lorenzo Creek to Johnson Landing

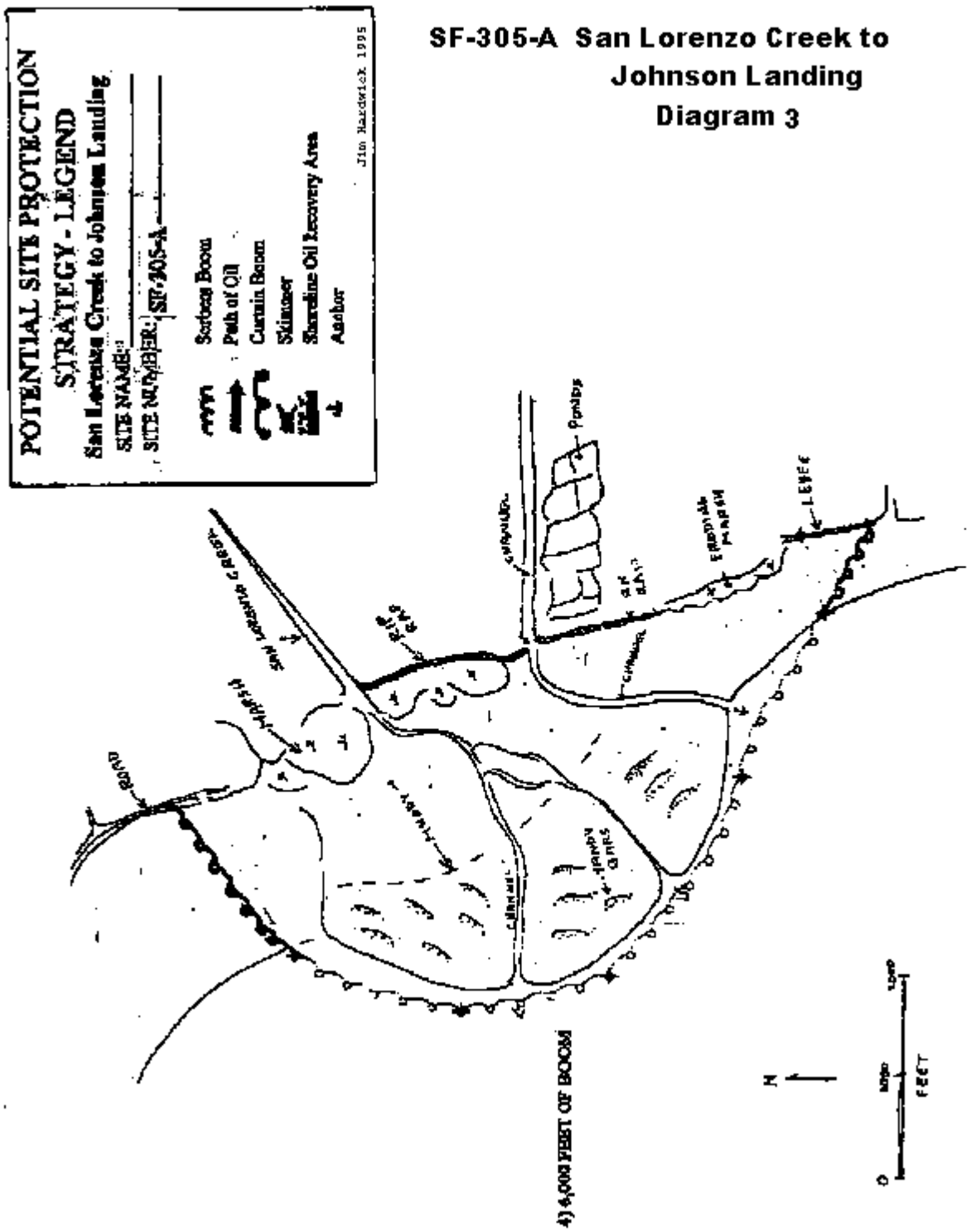
Diagram 1:

Oyster Park - Oakland Airport

SF-305-A San Lorenzo Creek to Johnson Landing
Diagram 2



SF-305-A San Lorenzo Creek to Johnson Landing
Diagram 3



SF-305-A San Lorenzo Creek to Johnson Landing Diagram 4

POTENTIAL SITE PROTECTION STRATEGY - LEGEND

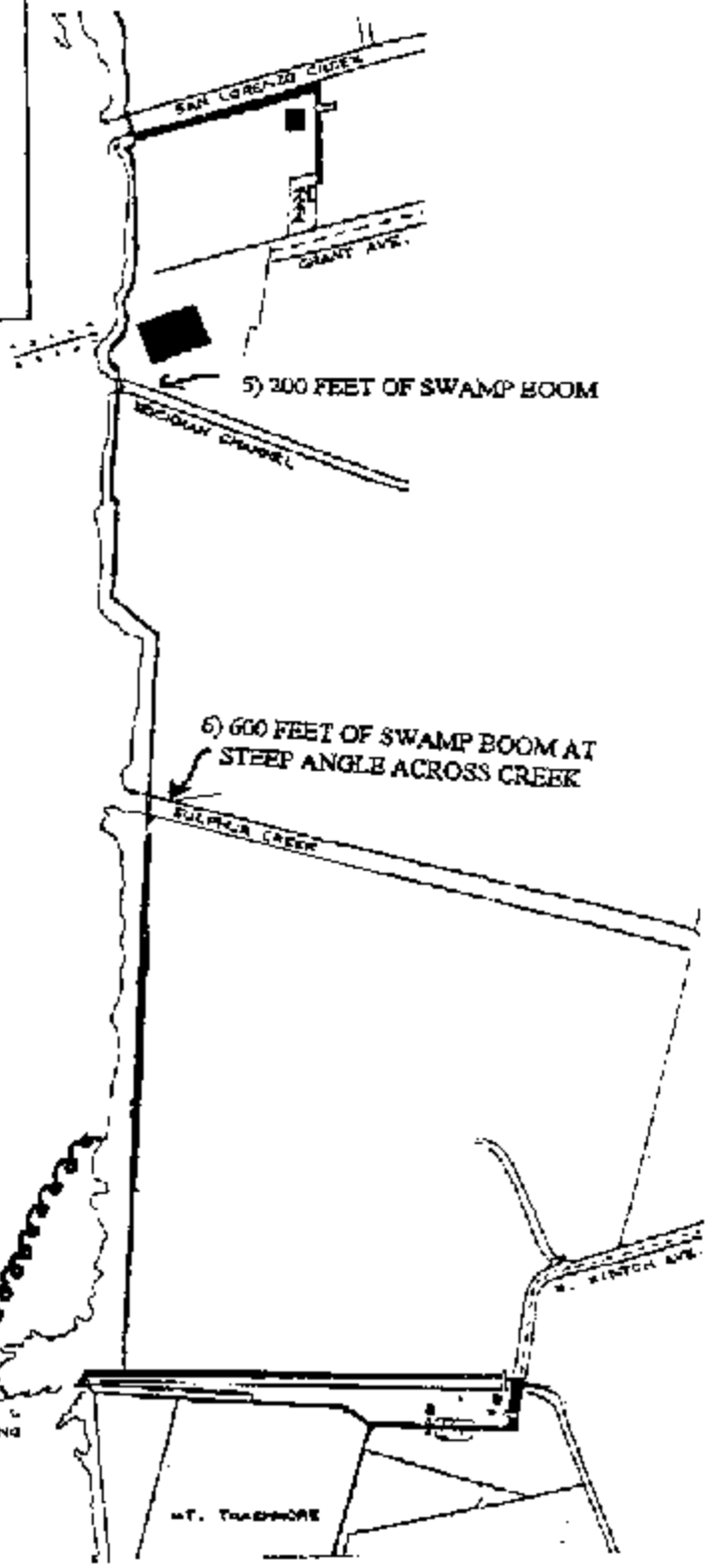
San Lorenzo Creek to Johnson Landing

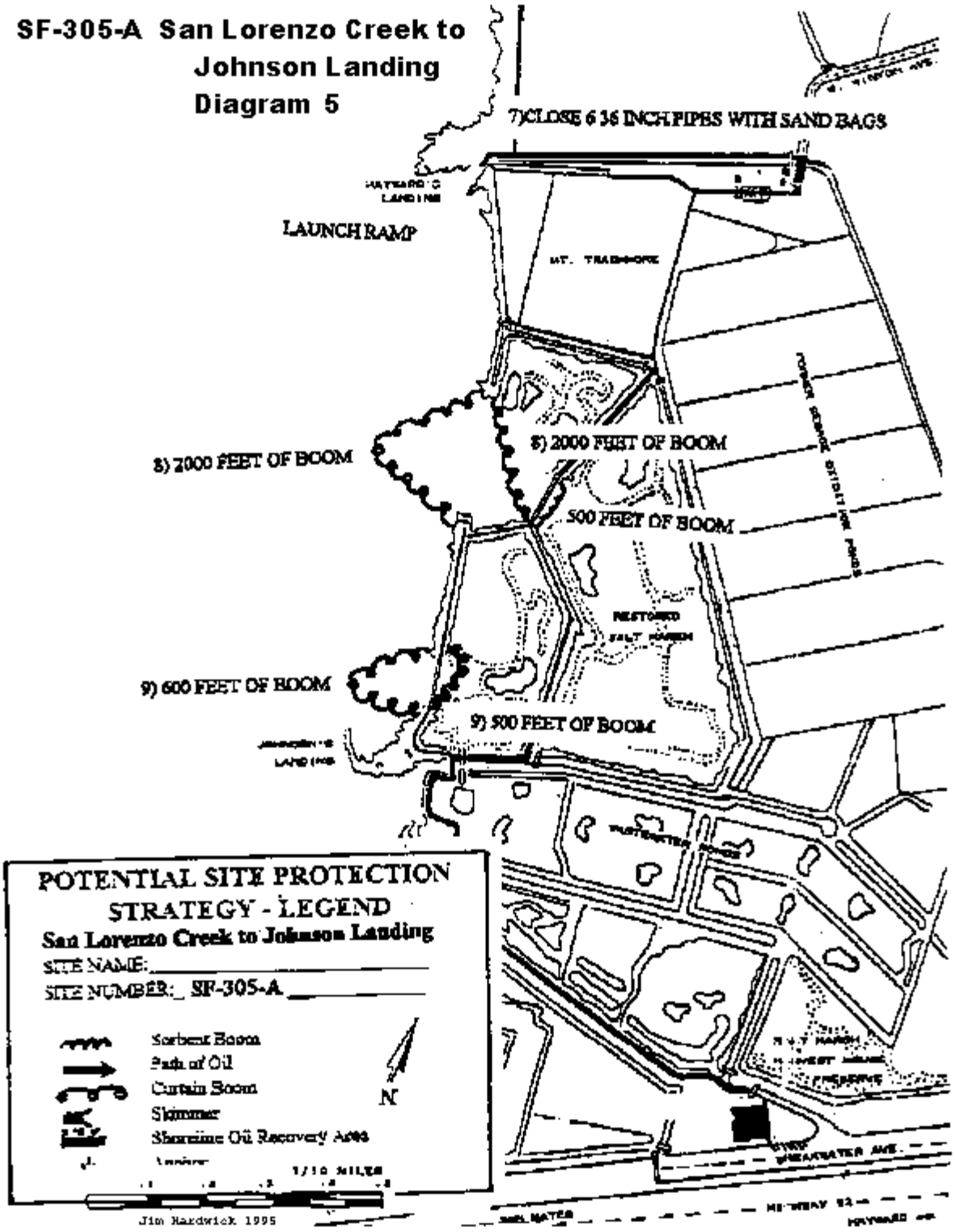
SITE NAME: _____

SITE NUMBER: SF-305-A

- Sorbent Boom
- Path of Oil
- Curtain Boom
- Skimmer
- Shoreline Oil Recovery Area
- Anchor

Jim Hardwick 1995




SF-305-A San Lorenzo Creek to Johnson Landing
Diagram 5
7)CLOSE 6 36 INCH PIPES WITH SAND BAGS
LAUNCH RAMP
8) 2000 FEET OF BOOM
8) 2000 FEET OF BOOM
500 FEET OF BOOM
9) 600 FEET OF BOOM
9) 500 FEET OF BOOM
POTENTIAL SITE PROTECTION STRATEGY - LEGEND
San Lorenzo Creek to Johnson Landing
SITE NAME:
SITE NUMBER: SF-305-A
Sorbent Boom
Path of Oil
Curtain Boom
Skimmer
Shoreline Oil Recovery Area
N
1/10 MILES
Jim Hardwick 1995

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Alameda Creek Marshes - Site Summary 2-306 -A

County: Alameda **GRP:** 3 **Latitude** 3729.0 N **Longitude** 12202.0 W
USGS: Redwood Point **OSPR Map:** 158-160 **Last ACPUpdate 07/01/96**

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

A large contiguous section of marsh located along the east side of south San Francisco Bay and roughly bounded on the north by highway 92, the east by the Southern Pacific Railroad, on the south by Coyote Hills Slough, and on the west by San Francisco Bay.

The most environmentally sensitive area lies between 0.6 and 2.6 miles south of the San Mateo Bridge. This salt marsh system is located on the east shoreline of South San Francisco Bay about one to two miles south of the San Mateo Bridge. It has two miles of bay frontage with multiple openings. Alameda Creek, the flood control channel, Mt. Eden Creek outlet and Union City Slough are the major inlets. Very shallow mudflats extend offshore for a mile. There appear to be failing levees along the edge of the marsh.

There are also wetland areas along the inside of the flood control channel that bisects Alameda Creek.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The marsh is an "A" priority all year.

RESOURCES AT RISK

HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)

The endangered California Clapper Rail (Rallus longirostris obsoletus) and salt marsh harvest mouse (Reithrodontomys raviventris) live in the marshes.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

Ohlone cultural sites are nearby. For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Region 3 Office	Ca Dept Fish & Game	(707) 944-4400	
	Mark Taylor	East Bay Regional Park	(510) 783-1066	
	Andrew Galvin	Ohlone Nation	(510) 810-9701	
	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	
	Janet Hanson	San Francisco Bird Observatory	(650) 728-5816	
	Valerie Layne	San Francisco Bird Observatory	(650) 728-5816	

2-306 -A Alameda Creek Marshes - Site Strategy

County: Alameda **CHART** San Francisco Bay, Southern Part Latitude 3729.0 N Longitude 12202.0 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site
A large contiguous section of marsh located along the east side of south San Francisco Bay and roughly bounded on the north by highway 92, the east by the Southern Pacific Railroad, on the south by Coyote Hills Slough, and on the west by San Francisco Bay. The most environmentally sensitive area lies between 0.6 and 2.6 miles south of the San Mateo Bridge.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Shallow water, Seas to 3 feet. Soft mud

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

Should oil enter the marsh, expect injury and death of marsh vegetation, small mammals, shorebirds and waterfowl.

SITE STRATEGIES

Strategy 2-306.1 (USCG Strategic Objective: **5&8**) **Dates:** SISRS Approved last tested ACP date

Objective or Prevention Condition **07/01/96**

Exclude oil from channels or stranding in the marsh. Divert it to less sensitive and more accessible shorelines on either side.

Technique Details Check here means **" No strategy diagram":** **(X)** Check here means **"Contact CCC": ( )**

1. Block the openings of channels (about nine openings) with several layers of sorbent booms.
2. Deploy 8,000-10,000ft. of boom having a minimum freeboard of 8 inches and a minimum draft of 6 inches offshore around the bay front exposure of the marsh using 30 lb anchors every 100 ft. Deliver the boom by truck or by off shore vessels; levee roads are passible only during dry conditions and mud flats extend offshore for over a mile which limits vessels to very shallow draft (2 feet or less) during higher tides. Ten open water skiffs with two persons each are the minimum number of small craft necessary to undertake this deployment. A sorbent boom will be necessary on the inside of the harbor boom

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-306.1	10000			100-30#w/20'1/2"chain each	15000	17/2			34	yes	5&8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Take Highway 880 south to reach the collection point on the flood control channel and exit at Alvarado Blvd. Proceed northwest on Horner St. and continue until it ends into Veasy St (Veasy St. runs parallel to the flood control channel). To reach the collection point on Alameda Creek, Take Highway 880 wouth to Alvarado Blvd. And head northwest. Turn left on Union City Blvd. And follow it to where it

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
Gravel road on flood control levee, dry season salt pond levee roads

WATER LOGISTICS:
Access limitations: depth, obstructions: SHALLOW DRAFT VESSELS <6'
Boat Launching, Loading, Docking and Services Available: Boat launching available at Redwood City Harbor or San Leandro Marina. Small skiffs may be launched from levees or Hayward Regional Shoreline.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Large staging area available at Redwood City Harbor. Small staging area and field post possible at Hayward Regional Shoreline or National Wildlife Refuge HQ. Command Post available at Alameda County OES.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS
Vehicle access is controlled by Cargil Salt and Alameda County Flood Control. Truck turn-arounds ar available within several hundred yards of the Bay shoreline.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

There is no strategy diagram.

Coyote Hills Slough Marshes - Site Summary 2-307 -A

County: Alameda **GRP:** 3 **Latitude** 3729.0 N **Longitude** 12202.0 W
USGS: Newark **OSPR Map:** 158-160 **Last ACP Update 07/01/96**

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

A large contiguous section of marsh located along the east side of south San Francisco Bay and bounded on the north by Coyote Hills Slough (Alameda County Flood Control Control Channel), on the east by the Coyote Hills, on the south by highway 84, and on the west by San Francisco Bay. Tidal salt marshes along the eastern shore of south San Francisco Bay about four miles south of the San Mateo Bridge. Levees once protected these marshes from tidal action but are now eroded in most places. These marshes also extend along both inside margins of Coyote Hills Slough, which opens to the Bay.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

The site is an "A" priority all year.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

The endangered California clapper rail, (Rallus longirostris) and salt marsh harvest mouse (Reithrodontomys raviventris) live in the marshes. Salt marsh habitat and shallows with complement of fauna and flora.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

Ohlone cultural sites are nearby. For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Region 3 Office	Ca Dept Fish & Game	(707) 944-4400	
	Joseph Didonato	East Bay Regional Park District	(510) 635-0135	
	Leigh Jordan	Office of Historic Preservaton	(707) 664-2494	
	Andrew Galvin	Ohlone Nation	(510) 810-9701	
	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	
	Janet Hanson	San Francisco Bird Observatory	(650) 728-5816	

2-307 -A Coyote Hills Slough Marshes - Site Strategy

County: Alameda **CHART** San Francisco Bay, Southern Part Latitude 3729.0 N Longitude 12202.0 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

A large contiguous section of marsh located along the east side of south San Francisco Bay and bounded on the north by Coyote Hills Slough (Alameda County Flood Control Control Channel), on the east by the Coyote Hills, on the south by highway 84, and on the west by San Francisco Bay.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Shallow water, Seas to 3 feet. Soft mud

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes

Should oil enter the marsh, expect injury and death of marsh vegetation, small mammals, shorebirds and waterfowl.

SITE STRATEGIES

Strategy 2-307.1 (USCG Strategic Objective:) **Dates:** SISRS Approved last tested ACP date

Objective or Prevention Condition **07/01/96**

Exclude oil from channels and marsh, and to divert it to shorelines less sensitive and more accessible for oil recovery and cleanup. The following site-specific protection me

Technique Details Check here means **" No strategy diagram":** ( ) Check here means **"Contact CCC":** ( )

1. Deploy 500 ft. of swamp boom and several layers of sorbent boom (up to 2,000 ft) in the openings of small channels, and breaches in levees (about three openings). The marsh behind the broken levee immediately north of Coyote Hills slough is particularly sensitive and vulnerable.
2. When trucks can use the gravel road on south side of Coyote Hills Slough deploy 1,000 feet of 8 X 8 harbor boom so as to deflect and contain oil against the south shore of the slough where it can be recovered by a vac truck. May us belt, Wallisep or oil mop type skimmer.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-307.1	1000	500		10-30#w/20'1/2"chain each	4000	3/1			10	yes	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Hwy 880 to Hwy 84 West. Thornton Ave. exit south to Marshlands Rd. Take Marshlands Rd. out to bay front near foot of Dumbarton Bridge. Access levee road via contact with San Francisco National Wildlife Refuge HQ. Nearest large boat ramp is at Redwood City, small boat launch near Refuge HQ on Newark Slough.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
Gravel roads to the bay border the Coyote Hills Slough channel.

WATER LOGISTICS:

Access limitations: depth, obstructions: SHALLOW DRAFT VESSELS <6'

Boat Launching, Loading, Docking and Services Available: Boat launching available at Redwood City Harbor. Small skiffs may be launched from levees.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Large staging area available at Redwood City Harbor. Small staging area and field post possible at National Wildlife Refuge HQ or Coyote Hills Regional Park. Command Post available at Alameda County OES.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

Vehicle access is controlled by Alameda County Flood Control. . Dry season vehicle access on Cargill salt pond levees

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

There is no Strategy Diagram.

Yerba Buena Island - Site Summary 2-351 -A

County: San Francisco **GRP:** 3 **Latitude** 37 48.5 N **Longitude** 122 21.7 W
USGS: Oakland, West **OSPR Map:** 055 **Last ACP Update 07/01/94**

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

Yerba Buena Island is a 338' high, 0.8 X 0.5 mile, rocky island on highway 80 between Oakland and San Francisco. Yerba Buena
Island lies between the two spans of the Oakland Bay Bridge. This site is a cobble beach immediately west of the lighthouse on the
south side of the island. There is access for foot traffic from parking lot above vice-admiral's house. Walk south to cliff or lighthouse
and descend to beach. There is a boat launch at the Treasure Island Yacht Club.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

"A" protection priority during harbor seal pupping season 15 March to 10 June, "B" priority balance of the year.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

Harbor seal rookery during spring when 30 to 50 seals use the site when tide is below +3 feet above mean lowere low water. 100 to
250 seals haul out at this site during the winter.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of
Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Diane Kopec	Earth Island Institue (seals)		
	C. Spencer	San Francisco State Universtiy	(415) 252-0291	
B	Peter Baye	U S Army Corps of Engineers	(415) 744-3322	

2-351 -A Yerba Buena Island - Site Strategy

County: San Francisco **CHART** Entrance to San Francisco Bay Latitude 37 48.5 N Longitude 122 21.7 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site **Update**

Yerba Buena Island is a 338' high, 0.8 X 0.5 mile, rocky island on highway 80 between Oakland and San Francisco.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Potential for 3 foot seas. Rocky shoreline,

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

Injury and death to be expected if harbor seal pups inhale or ingest oil. There is high risk of pups ingesting oil while nursing if mothers become oiled.

SITE STRATEGIES

Strategy 2-351.1 (USCG Strategic Objective: **8&7**) **Dates:** SISRS Approved 02/06/1999 last tested ACP date

Objective or Prevention Condition

Prevent oiling of harbor seals and rocks near where they haul out. Avoid driving hauled out harbor seals into the water.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**

Deploy 3,000 feet of harbor boom parallel to the shoreline around the south end of the island to keep oil off the pocket beaches just west of lighthouse point. Care must be taken to prevent oil from getting behind the boom at either end. A 200 foot deflection boom should be in place at the west end of the boom during the flood tide. A similar deflection may be necessary at the east end of the boom under some wind and tide conditions.

Anchoring Recommendations: The east end of the boom may be fastened to the southwest corner of the Coast Guard Station or anchored off the rocky point between the station and the lighthouse. The west end of the boom should be anchored west of the end and gravel beaches but south east of the western span of the Oakland Bay Bridge. The east end of the boom may be fastened to the USCG station seawall/pier if prior permission is obtained from the commanding officer of the Coast Guard Station. This is most rapidly accomplished through the Coast Guard's Marine Safety Office in Alameda.

Few midpoint anchors are needed where the boom is deployed parallel to straight shorelines. Although the tidal currents are strong they run parallel to the shore in these areas. Midpoint anchors are needed primarily to keep the boom off the headland below the lighthouse. Danforth anchors are satisfactory in the soft bottoms off the beaches where seals haul out, but Northhill anchors should be used on the rocky bottom below the lighthouse. The boom may be attached to the dolphin pilings off the beaches. Large eye bolts on the rocky point below lighthouse and a small rocky point west of seal haulout beach could also be used for anchoring.

If booms with incompatible end connectors are used they should be overlapped 100 ft. If fence boom is used it should be used at the east end near the Coast Guard docks, and deployed in 500 foot pieces and connected on scene to prevent the twisting to which this boom is prone when towed in long segments. Midpoint and down current anchors can be adjusted after the boom is in deployed.

Use the crown line to tow anchors offshore or down current to end of the scope on the anchor line while taking care to not tow them into water deeper than the anchor or crown lines.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-351.1	3000'			15 - 40# w/ 20' 1/2" chain		5/2		3000' 1/2" anchor line	14	yes	8&7

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Take Highway 880 to westbound Highway 80. Get on the Oakland Bay Bridge. While still on the Bridge take the Yerba Buena Island exit (Hillcrest Rd). Follow signs to the USCG Station.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
Poor to impossible access from land.

WATER LOGISTICS:

Access limitations: depth, obstructions: submerged rocks and rocky shore around most of island.

Boat Launching, Loading, Docking and Services Available: Estuary Park & Fifth Ave. Marina, Oakland; Ballena Isle Marina, Alameda; Emeryville Marina; Berkeley Marina, Berthing at Treasure Island Marina

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Space for large staging area, and field post or Command Post is available on Treasure Island

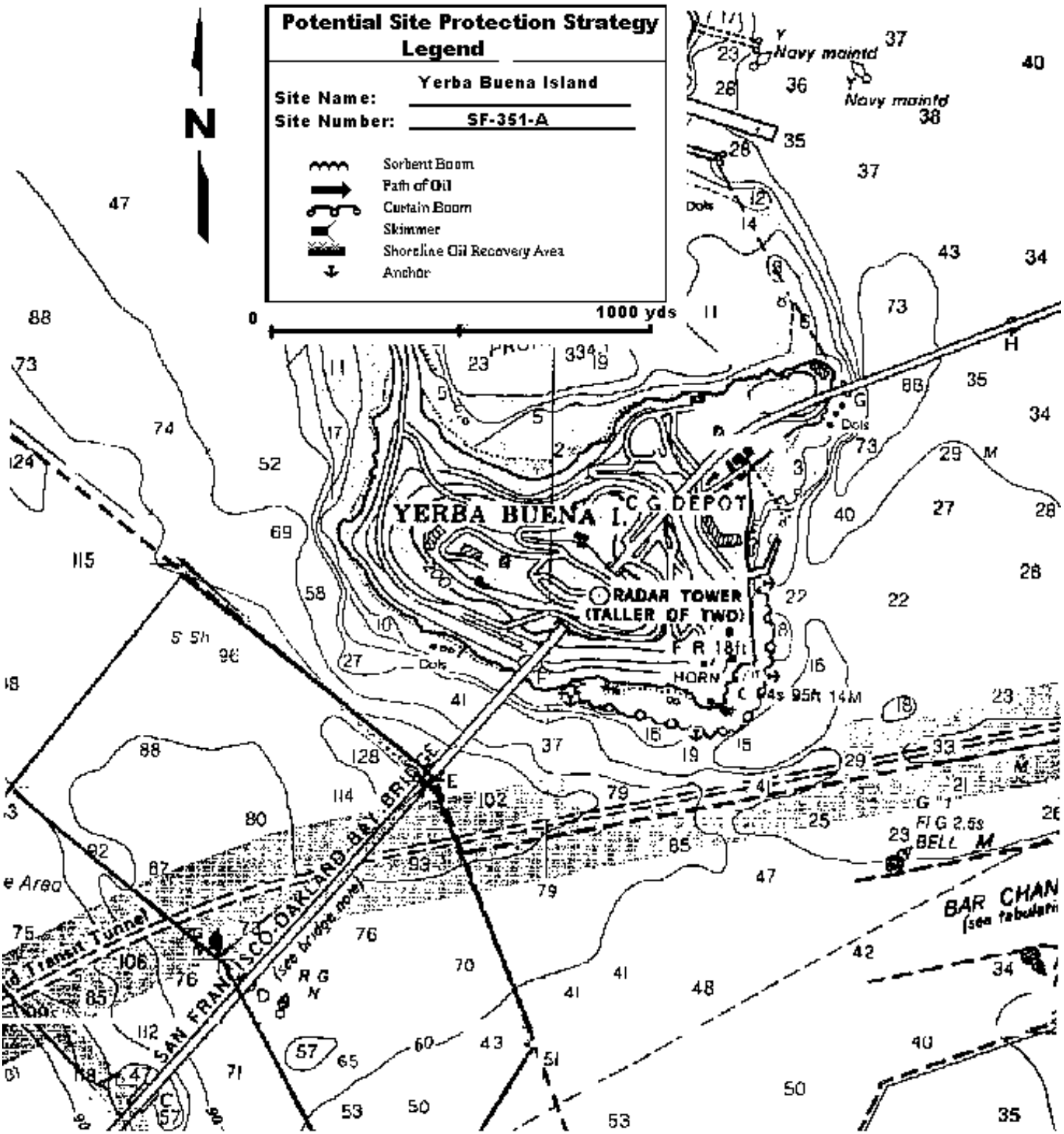
COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

Bottom type - hard mud, shell, rocks. Possible staging and collection site at USCG station or US Navy facility. Boom (slick bar) on-scene in water at Treasure Island Navy docks. Contact USCG at YBI and US Navy at TI. Poor to impossible access from land. .

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


Potential Site Protection Strategy
Legend
Site Name: Yerba Buena Island
Site Number: SF-351-A
Sorbent Boom
Path of Oil
Curtain Boom
Skimmer
Shoreline Oil Recovery Area
Anchor
N
0
1000 yds
YERBA BUENA I.
C G DEPOT
RADAR TOWER
(TALLER OF TWO)
HORN
SAN FRANCISCO-OAKLAND BAY BRIDGE
(see bridge note)
Navy maintd
Navy maintd
BAR CHAN

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South Basin, Hunters Point - Site Summary 2-352 -B

County: San Francisco **GRP:** 3 **Latitude** 37 43 N **Longitude** 122 23 W
USGS: San Francisco South **OSPR Map:** 56 **Last ACP Update** 07/01/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

South Basin lies between Hunter's Point and Candlestick Point on the San Francisco Peninsula. At the head of South Basin is a narrow fringing marsh and mudflat, shores along Candlestick point are sandy beaches and rip rap, the remainder of the shoreline is concrete slab rip rap.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

"B" protection priority. During the fall and winter months, high concentrations of waterfowl (1,000's) and migratory shorebirds are present.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

There are fringe marshes and tidal mudflats of importance at this site.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Waterfowl and shorebirds use this site throughout the year but particularly in winter when massive numbers gather here. During the fall and winter months, high concentrations of waterfowl (1,000's) and migratory shorebirds are present.

eelgrass beds are present.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
		Candlestick Point State Recreation Area	(415) 671-0147	
	DISPATCH	Candlestick Point State Recreation Area	(800) 548-1431	

2-352 -B South Basin, Hunters Point - Site Strategy

County: San Francisco **CHART** 18649/18650 Entrance to SF Bay

Latitude	Longitude
37 43 N	122 23 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site **Update**

South Basin lies between Hunter's Point and Candlestick Point on the San Francisco Peninsula.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Vessels beware of shallow waters and obstructions.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

This site is used by large numbers of birds, particularly in fall/winter, and there are marshes and mudflats which are vulnerable to oiling. The primary concern is to keep oil out pocket coves by exclusion booming and collection. Always a concern is that response and cleanup will result in impacts: avoid disturbing wildlife, trampling vegetation, tearing up eelgrass beds with anchors and boat props, and tracking oil into marsh and mudflat sediments.

SITE STRATEGIES

Strategy 2-352.1

(USCG Strategic Objective: **5,8**) **Dates:** SISRS 03/01/1995 Approved last tested 04/03/1996 ACP date 07/01/1996

Objective or Prevention Condition

Exclusion/protection booming to prevent oil from reaching marsh in South Basin or beaches at Candlestick Point.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**

1) Deploy 1,300 - 1,500 ft. of curtain boom across narrowed opening to inner South Basin to exclude oil from marsh and mudflat. Place skimmer at apex of boom if oil collects here.

2) Deploy 2,000 ft of curtain boom in a J-hook configuration from middle point at the opening of the inner South Basin to the inside of Candlestick Point. Place skimmer or vacuum truck hose at J-hook pocket near shore if oil collects here.

Strategy 2-352.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 03/01/1995 Approved last tested ACP date 07/01/1996

Objective or Prevention Condition

Deflect oil away and past site.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**

Deploy deflection with 500 ft of curtain boom off end of Navy pier.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-352.1	3500			5 / 22+/ Danforth with chain		3*/0	SFS/SSS	1/1 *shallow draft Bboat	8-12		5,8
2-352.2	500			2/22+/danforth		1*/0		*shallow water Bboat	3		7

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Site is south of San Francisco at Candlestick Point area. Exit Hwy 101 at Candlestick (3Com Park) exit and proceed bayward past 3COM Stadium to Candlestick Pt State Recreation Area.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
good access all types: contact Park Maintenance

WATER LOGISTICS:

Access limitations: depth, obstructions: shallow water and obstructions

Boat Launching, Loading, Docking and Services Available: Oyster Pt marina, ramps near piers 70 and 50.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Staging at Candlestick Point. Access restricted from land to heavy trucks. Contact Park Maintenance.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

PROTECTION SITE SKETCH MAP

SOUTH BASIN

Site Name SAN FRANCISCO, CA.

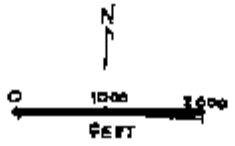
Recorder(s) MOH / TMM / SISRS (3/95)

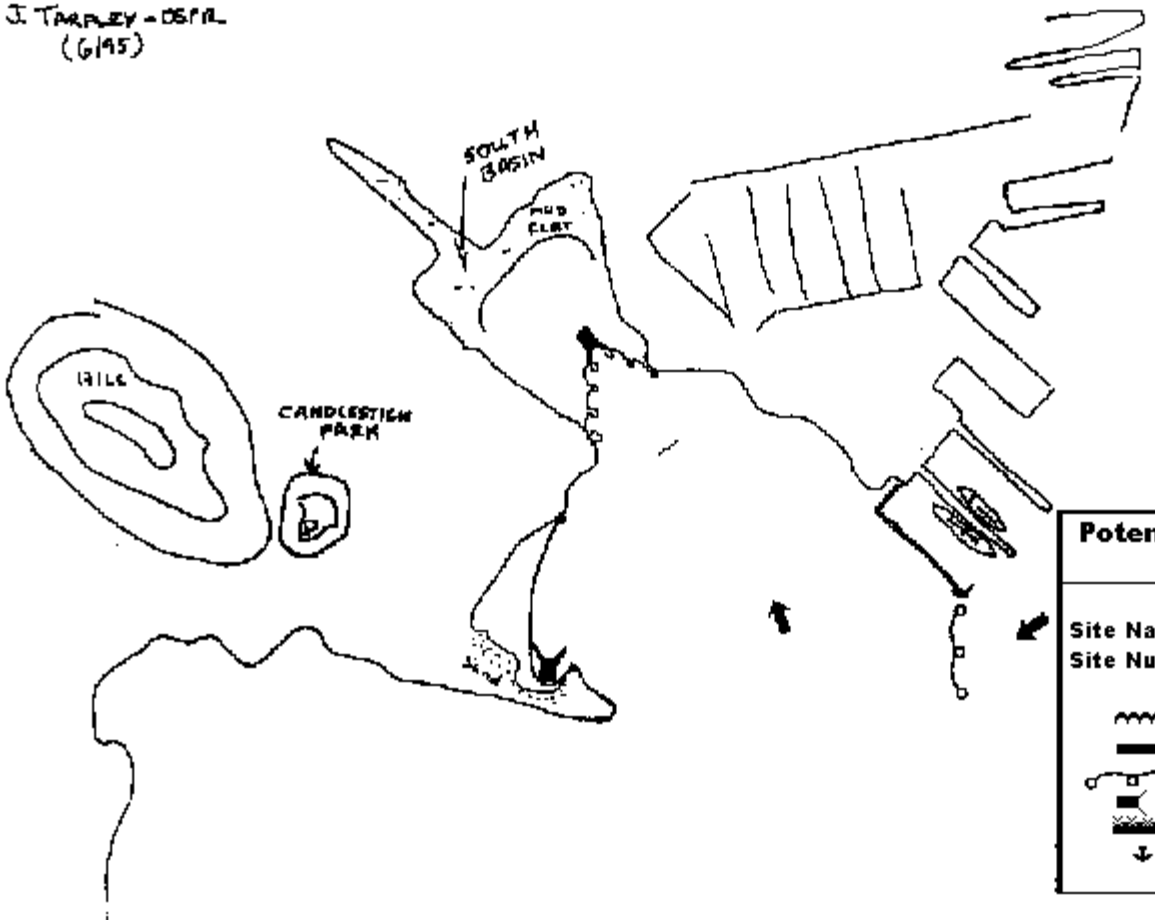
Date/Time AUGUST, 1993

Tide Stage -

Site Classification 7

Modified by J. TARPLEY - OSPR (6/95)





Potential Site Protection Strategy Legend

Site Name: South Basin

Site Number: SF-352-B

- Sorbent Boom
- Path of Oil
- Curtain Boom
- Skimmer
- Shoreline Oil Recovery Area
- Anchor

Site SF-352-B

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Heron's Head Park - India Basin - Site Summary 2-353-A

County: San Francisco **GRP:** 3 **Latitude** 37 44.3 N **Longitude** 122 22.5 W
USGS: San Francisco South **OSPR Map:** **Last ACP Update** 01/01/2000

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes the entire north margin of India Basin and the land north of the power plant discharge channel. This wetland park is undergoing restoration. It is a narrow peninsula with high ground, about 8 acres of tidal marsh, and mudflat shores. The site has been graded to create a combination of pools and high grounds with walking paths. There are several small tidal inlets on the south and west margins (about 500 ft total length) which admit tidal exchange to interior ponds. There is a channel with power plant cooling water discharge at the southwest edge. The bay to the south is exceedingly shallow. The north side is a riprap/pebble shore with low sensitivity. The site is undergoing natural revegetation, and the marshy vegetation is not very developed at this time. With time it will become increasingly sensitive as marsh vegetation and the marsh community develop fully

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

Marshes have A-sensitivity and priority protection at all times.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This is a wetland restoration site. It has high ground vegetation, pickleweed marsh, and saltmarsh ponds and lagoons. The site is surrounded by mudflats. As of 1999, vegetation is in early stages of recolonization following grading and reconstruction.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

A variety of water birds, shorebirds and upland songbirds.
Potentially this site is suitable for saltmarsh harvest mouse.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

None likely since this site was created by wetland filling. For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494)).

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
OLE	Nicholas Salcedo	BCDC - Bay Conservation and	(415) 557-3689	(415) 557-3767
LEB	David Hayes	Ca Coastal Conservancy	(510) 286-0736	(510) 286-0470
BEL	Carol Bach	Port of San Francisco	(415) 274-0569	(415) 274-0586

2-353 -C/A Heron's Head Park - India Basin - Site Strategy

County: San Francisco **CHART** 18649/18650 Entrance to SF Bay **Latitude** 37 44.3 N **Longitude** 122 22.5 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site includes the entire north margin of India Basin and the land north of the power plant discharge channel.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

This basin is very shallow - follow the stakes which mark the channel.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

The tidal inlets could admit oil to the lagoons, ponds, low marsh areas on this site, and as emergent marshes develop along shorelines, these would be vulnerable to oil impacts. Exclude oil from all inlets and protect shorelines or deflect away. Avoid trampling marsh vegetation. This is a marsh restoration site.

SITE STRATEGIES

Strategy 2-353.1

(USCG Strategic Objective: **6**) **Dates:** SISRS 06/06/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Prevent oil from entering small tidal inlets to inner ponds and lagoons.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**

Close small tidal inlets with shore sections of swamp (river) boom 4X4+ (80ft) and back with sorbent. Stake in place. Several openings are along south middle margin of the site and one at the end of a rock wall opposite the power plant. This can be most easily accomplished by land deployment.

Strategy 2-353.2

(USCG Strategic Objective: **5**) **Dates:** SISRS 02/06/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

For conditions when oil is likely to enter India Basin, such as easterly winds, deflect oil away from site to south shore.

Technique Details Check here means **" No strategy diagram": ( )** Check here means **"Contact CCC": ( )**

Deploy 2,500 feet of Hboom from the east end of the spit to the south shore of India basin. Deploy at an angle to the prevailing wind so that the oil will slide down the boom to the south shoreline where the oil can be collected can be collect at the shoreline with shore-based skimming equipment. The boom may be cascaded if that will make it easier to deploy. Stakes may be helpful to keep the boom from forming catinary pockets. Boom can be delivered to site by boat or vehicle. Sites on south side can enable rapid recharge of boom boats from shore support. A cascade may be necessary to admit boat traffic to boat launch at India Basiin Park.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-353.1		80		stakes	80				2	daily checks	6
2-353.2	2500			4/22+/danforths & stakes		4/1			12	2	5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

By boat the site is at the back of India Basin: proceed south along the SF waterfront about 4 miles from the Bay Bridge and turn west into India Basin just north of Hunters Pt. - Pt. Avisadero (Light G 5). By vehicle, exit Hwy 101 south of SF center at Army St. Continue east toward Bay on Arm and turn south (right) on Evans Ave. Evans Ave becomes Hunters Point Blvd. India Basin Shoreline Park is on the left and there is a marina of Griffith St.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
foot & ATV on site. All types on south shore of India Basin

WATER LOGISTICS:

Access limitations: depth, obstructions: Very shallow < 4' in most of basin and shallower at shore.

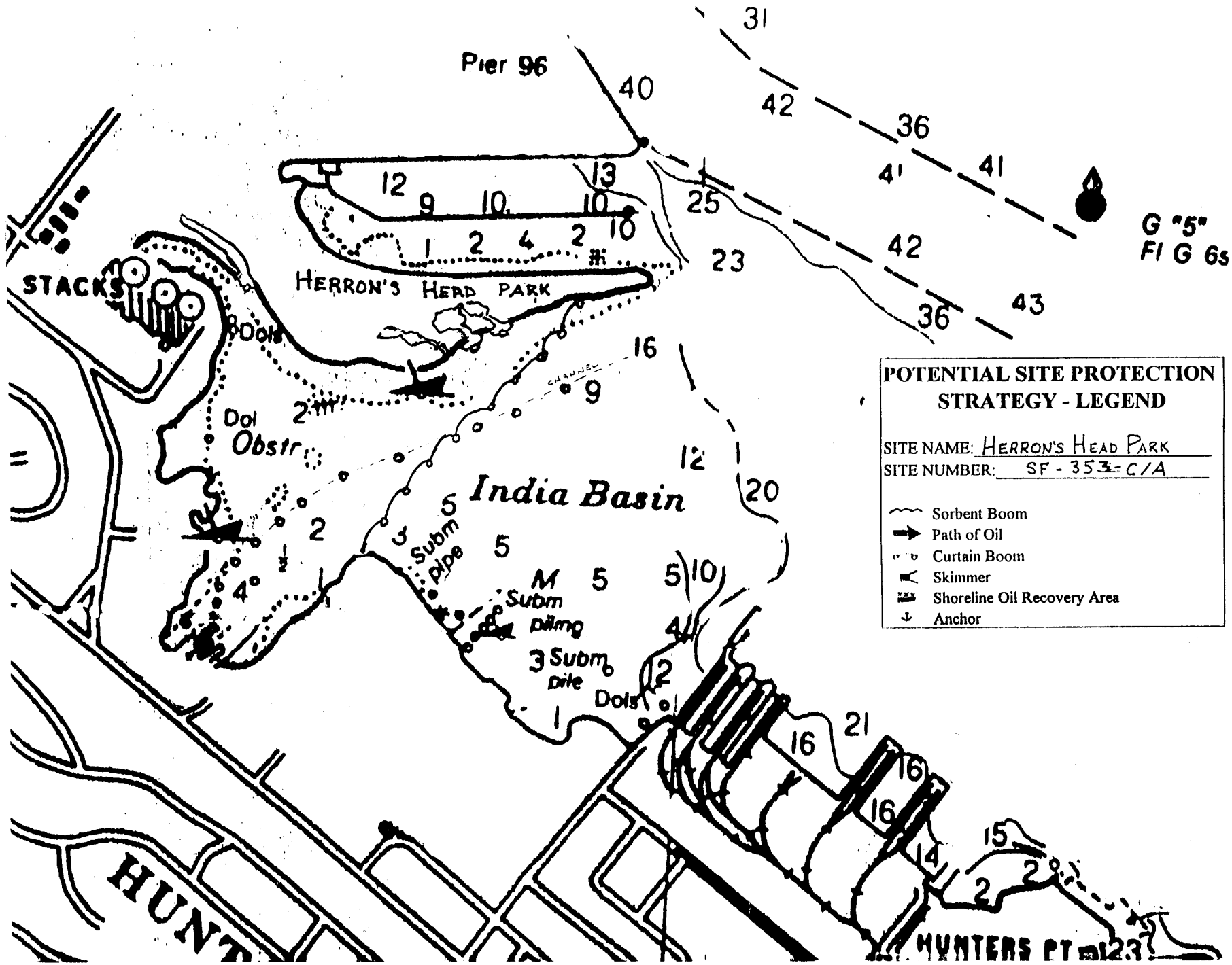
Boat Launching, Loading, Docking and Services Available: Launch on south shore of basin.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Staging on south shore of India Basin.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


Pier 96
HERRON'S HEAD PARK
STACKS
India Basin
HUNTERS PT
G "5"
Fl G 6s
POTENTIAL SITE PROTECTION STRATEGY - LEGEND
SITE NAME: HERRON'S HEAD PARK
SITE NUMBER: SF - 353-C/A
Sorbent Boom
Path of Oil
Curtain Boom
Skimmer
Shoreline Oil Recovery Area
Anchor

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Islais Creek - Pier 94 Saltmarsh - Site Summary 2-354-B/A

County: San Francisco **GRP:** 3 **Latitude** 37 44.3 N **Longitude** 122 22.5 W
USGS: San Francisco South **OSPR Map:** **Last ACP Update** **01/01/2000**

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**

This 10+ acre site is the cornerof Pier 94 at the south edge of the mouth of Islais Creek Channel and extends from pier 96 back into the channel about a third of a mile. It is a narrow 200+ yard wide parcel along the south side of the channel with high ground and about 5 acres of high saltmarsh. The site had been undergoing fill and there are mounds of rubble interspersed across the pickleweed and saltgrass marsh. The north side is a ripped shore with low sensitivity. There is a small tidal inlet on the east margin near the pier 96 wharf which admits tidal exchange to an interior marsh there. For this reason it is now evaluated as a B-level site because it is uncommon habitat for water and shorebird use and resting in a very industrial area, but is anticipated to become an A-level site in time.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**

This site has "B" sensitivity because it is a small wetland and has heavy waterbird and shorebird use during the winter migration. It has the potential to become a substantial wetland in time (A-level).

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This site is traditional saltmarsh that has undergone some filling. It provides valuable wetland habitat in a heavily industrialized portion of the Bay. It has demolition debris fill, high ground vegetation, pickleweed marsh, and saltmarsh ponds. The perimeter is riprap.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

A variety of water birds, shorebirds and marsh birds.
This is possible saltmarsh harvest mouse habitat.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
EO	Carol Bach	Port of San Francisco	(415) 274-0569	(415) 274-0586

2-354 -B/A Islais Creek - Pier 94 Saltmarsh - Site Strategy

County: San Francisco **CHART** 18649/18650 Entrance to SF Bay

Latitude 37 44.3 N Longitude 122 22.5 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site **Update**

This 10+ acre site is the corner of Pier 94 at the south edge of the mouth of Islais Creek Channel and extends from pier 96 back into the channel about a third of a mile.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Riprap poses slip, trip and fall hazards. Vessels beware of submerged objects and shallows at margins.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

The tidal inlets could admit oil to the ponds and low marsh areas on this site. The openings are at the east end and can be protected exclusion booming at the inlet and protective booming just offshore. Avoid trampling marsh vegetation. This is a planned marsh restoration site.

SITE STRATEGIES

Strategy 2-354.1

(USCG Strategic Objective: **5,8**) **Dates:** SISRS 06/05/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Exclude oil from entering inlet and protect site from oil.

Technique Details Check here means **" No strategy diagram":** **( )** Check here means **"Contact CCC":** **( )**

Place a length of boom at opening of rocks near pier 96 wharf and back with sorbent. Stake in place.

Deploy 1,000 feet of harbor boom from pier 94 to the south shore of the entrance to Islais Creek.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-354.1	1000	50		3/22+/danforths & stakes	50	1/1					5,8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

By boat the site is at the south margin of the mouth of Islais Creek Channel (which is Pier 94): proceed south along the SF waterfront about 4 miles from the Bay Bridge to Islais Creek Channel (just south of Army St Terminal-North Container Terminal -Pier 80). By vehicle, exit Hwy 101 south of SF center at Army St. Continue east toward Bay on Army and turn south (right) on 3rd St and then left on Cargo Way. Access through industrial drives toward bay - pier 94 and pier 96

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
foot & ATV on site. All types to adjacent piers.

WATER LOGISTICS:

Access limitations: depth, obstructions: Good water.

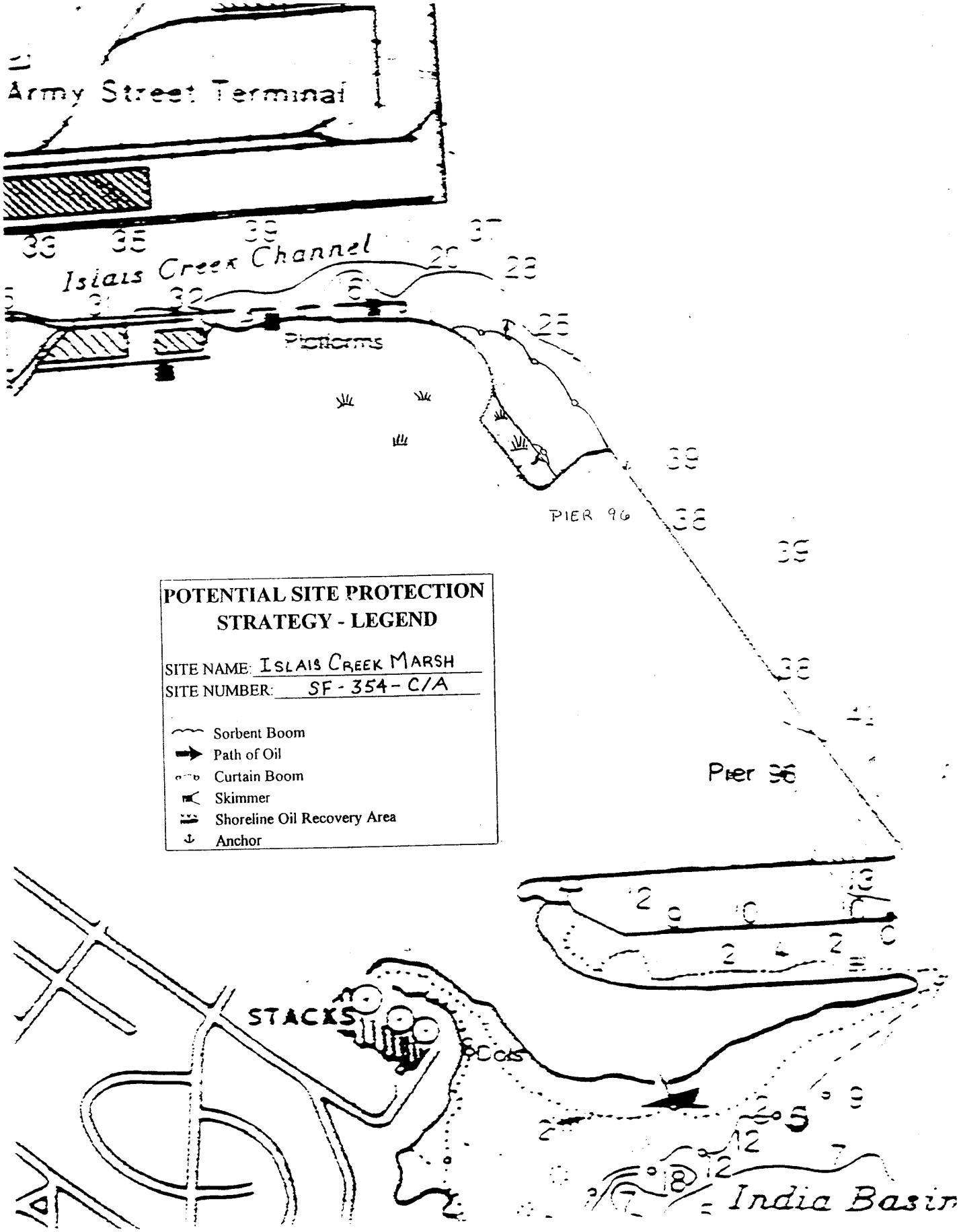
Boat Launching, Loading, Docking and Services Available: Launch on south shore of India Basin or at South Beach Marina near the Bay Bridge, where there are facilities, fuel and mooring.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Staging on Pier 96 or Pier 80, either side of the channel.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS



POTENTIAL SITE PROTECTION STRATEGY - LEGEND

SITE NAME: ISLAIS CREEK MARSH
SITE NUMBER: SF-354-C/A

- Sorbent Boom
- Path of Oil
- Curtain Boom
- Skimmer
- Shoreline Oil Recovery Area
- Anchor

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Airport Mudflat - Site Summary 2-361 -A

County: San Francisco **GRP:** 3 **Latitude** 37 36 N **Longitude** 122 22 W
USGS: San Mateo **OSPR Map:** **Last ACP Update** 07/01/1996

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**

This site is fringing marsh and a large tidal mudflat in a cove between the San Francisco International Airport runway and Coyote Point. The cove is a deeply recessed crescent to the west with riprap on some shores. In the eastern part of the site, along the south shore, two openings allow tidal flow to marshes behind the rip rap shore. The eastern most opening is Sanchez Creek. Shallow water and obstructive debris are present throughout this area.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**

"A" protection priority year-round.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

The major habitat types present are marshes, mudflats, and riprap. The marsh is at the back of the cove at the northwest margin and behind the riprap in the south side. Tidal mudflats span the site.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

The endangered California Clapper Rail is a resident of the marsh. The cove serves as a feeding and resting area for waterfowl, wading birds and shore birds. The mudflat is a feeding area for shore birds. Waterfowl and shorebird use is highest in the fall and winter.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	H. C. Dr. Monroe	College of San Mateo	(650) 574-6161	
B	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	

2-361 -A Airport Mudflat - Site Strategy

County: San Francisco **CHART** 18649/18650 Entrance to SF Bay

Latitude	Longitude
37 36 N	122 22 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware: this is in or near S.F. International Airport restricted airspace; hazards from incoming planes. Vessels beware of shallow water and submerged obstructions.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
This site is used by endangered birds to breed and many other birds throughout the year for resting and feeding. The primary concern is to keep oil from oiling the marshes and to keep oil out of the cove where birds gather. In addition, response activity itself can be severely damaging: avoid harassing wildlife, trampling marsh plants, treading oil into marsh and mud, or disturbing the tidal flat bottom.

SITE STRATEGIES

Strategy 2-361.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 03/01/1995 Approved last tested ACP date 07/01/1996

Objective or Prevention Condition
Exclude oil from entering slough openings and cove.

Technique Details Check here means **" No strategy diagram":** ( ) Check here means **"Contact CCC":** ( )
1) Deploy 7,600 ft of curtain boom along the outer edge of the intertidal mudflat to exclude oil from the marsh. Line boom from SE corner of runway along mudflat to rip rap on southern shoreline.
2) Exclude oil from entrance to "pond" on south shore with 200 ft. of curtain boom doubled back across entrance (100 ft. across two times)
3) Exclude oil from Sanchez Creek, a rip rapped slough channel leading to the large marsh along freeway. Deploy 400 ft. of curtain

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-361.1	8200			35/20-40/danforth w chain		4/4		4 shallow draft boomboats	25-30		5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Vehicle access available near the shoreline: From Hwy 101, exit on Millbrae and drive along shoreline on Bayshore Hwy and Airport Blvd, or exit on Peninsula Ave and proceed bayward on Coyote Point Drive to Coyote Point Count Recreation Area and Coyote Point Marina.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
large truck

WATER LOGISTICS:
Access limitations: depth, obstructions: extremely shallow waters and obstructions are limiting
Boat Launching, Loading, Docking and Services Available: Coyote Pt. Marina and Oyster Pt. Marina

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Coyote Point Marina, Oyster Point Marina, possibly SF airport, and parking lots along south shore.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

Site SF-361-A

PROTECTION SITE SKETCH MAP
Potential Site Protection Strategy Legend
San Francisco Airport Mudflats
Site Name:
Site Number: SF-361-A
Sorbent Boom
Path of Oil
Curtain Boom
Skimmer
Shoreline Oil Recovery Area
Anchor
Sanchez Creek
LEGEND
Recommended Oil Containment Area
Salt-Water Marsh
Fresh- and/or Brackish-Water Marsh

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Belmont Slough - Site Summary 2-362 -A

County: San Mateo **GRP:** 3 **Latitude** 37 33 N **Longitude** 122 15 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 07/01/1996

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site includes the length of Belmont Slough and branching sloughs (Bay Slough) and the saltmarsh and mudflat frontage at the Bay front. Belmont Slough is a narrow channel on the southwest shore of South San Francisco Bay, one mile south of the San Mateo-Hayward Bridge. Marsh and mudflat are present at the mouth and along its banks. There is a large bay front saltmarsh between the bay and Bay Slough. The mudflat bayward of the marsh is very wide and shallow. It is part of San Francisco National Wildlife Refuge and California Department of Fish and Game Redwood Shores Ecological Reserve.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

"A" priority all year. Endangered species are present all year.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

Main habitats of concern are bay front and slough margin saltmarsh and extensive tidal mudflats.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; Threatened - western snowy plover; Calfinoria Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.

Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew. Harbor seals frequent this site.

The sloughs and mudflats are important habitat for fish, shellfish and infauna and foraging habitat for birds.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	H. C. Dr. Monroe	College of San Mateo	(650) 574-6161	
B	Diane Kopec	Earth Island Institue (seals)		
BT	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-362 -A Belmont Slough - Site Strategy

County: San Mateo **CHART** 18649/18650 Entrance to SF Bay **Latitude** 37 33 N **Longitude** 122 15 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site
This site includes the length of Belmont Slough and branching sloughs (Bay Slough) and the saltmarsh and mudflat frontage at the Bay

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware of high power wires. Vessels be aware that Belmont Slough is very narrow and unmarked and mudflats and margins are very shallow.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
The concern is oil and response impacts to marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Belmont Slough. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-362.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 03/01/1995 Approved last tested ACP date 07/01/1996

Objective or Prevention Condition
Prevent oil fom entering Belmont Slough.

Technique Details Check here means **" No strategy diagram":** ( ) Check here means **"Contact CCC":** ( )
1) Deploy several 600 to 1,000+ ft. sections of 30 to 48 inch curtain boom cascading south along the mudflat/channel shelf contour to deflect oil back into main current and away from shore.
2) Deploy 200 ft. of tidal barrier boom from prominent rip rapped point NW of Belmont Slough entrance marsh across mudflat to channel margin. Exclude and deflect oil away from the marsh into a skimmer located in the main channel near the confluence of Belmont and Bay Sloughs.

Strategy 2-362.2

(USCG Strategic Objective: **8**) **Dates:** SISRS 03/01/1995 Approved last tested ACP date 07/01/1996

Objective or Prevention Condition
Protective booming of bayfront tidal marsh

Technique Details Check here means **" No strategy diagram":** ( ) Check here means **"Contact CCC":** ( )
Deploy 6,000 ft. of exclusion boom on the bay side of salt marsh island in front of Bay Slough. At the north end connect with boom leg of skimmer system. Tidal barrier boom is preferred, however, curtain boom backed with several layers of sorbent boom may also

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-362.1	4000		TB 200	18/40/ Danforht		3/0	SPS	1	14		5
2-362.2	6000			35/22+/Danforth		2/3			16		8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Primary access is via water since land access is limited by fronting marsh. By land, exit Hwy 101 at East Hillsdale Blvd and proceed on Hillsdale or Foster City Blvd bayward to Beach Park Blvd.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
All types along Beach Park Blvd

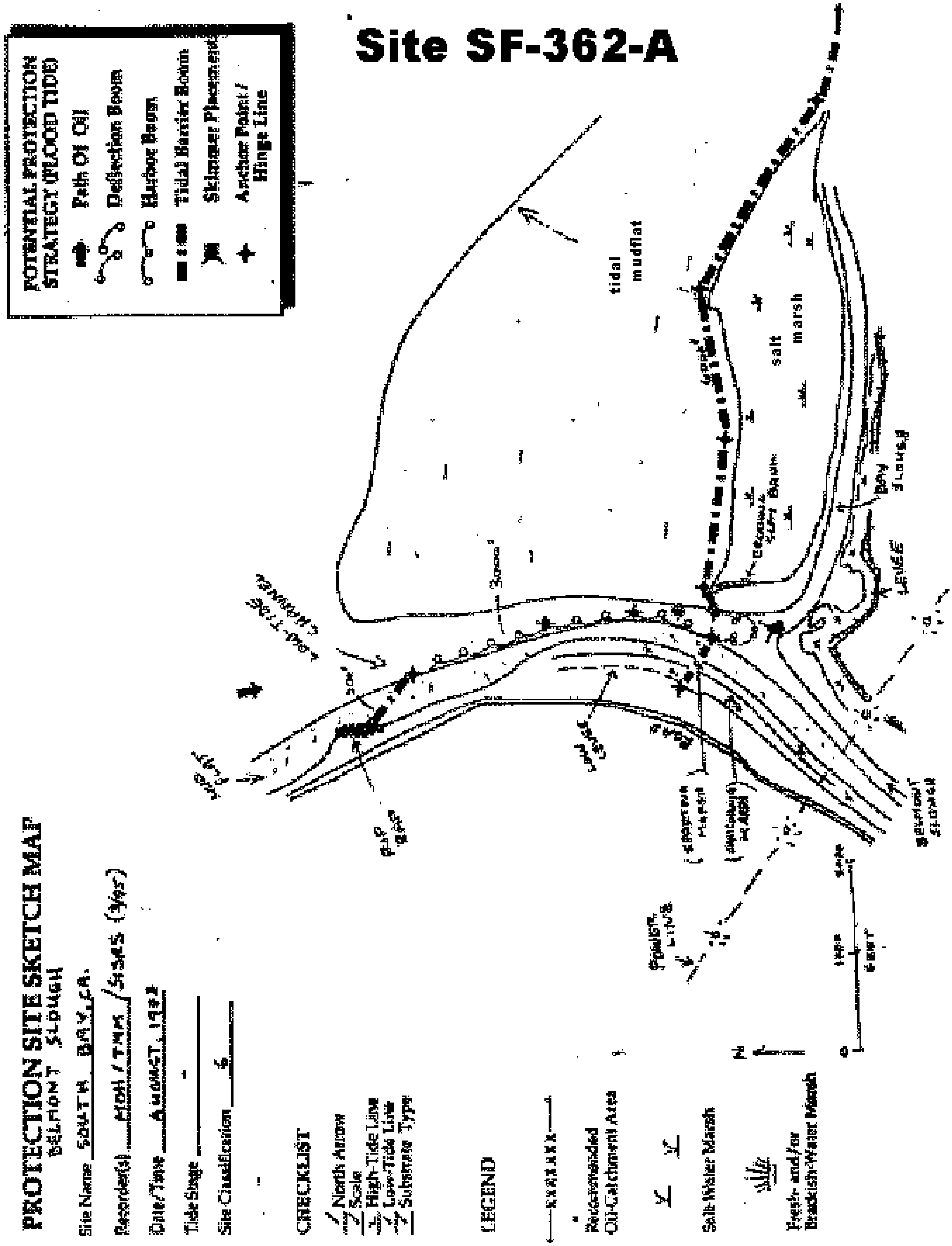
WATER LOGISTICS:
Access limitations: depth, obstructions: Extreme shallows and mudflats at low tide.
Boat Launching, Loading, Docking and Services Available: Redwood City Marina

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Redwood City Marina, harbor and possibly along Beach Park Blvd. On Brewer Island in Foster City.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

Site SF-362-A


PROTECTION SITE SKETCH MAP
BELMONT SLOUGH
Site Name SOUTH BAY, CA.
Recorder(s) MOH / TMM / SISAS (3/95)
Date/Time AUGUST, 1992
Tide Stage -
Site Classification 6
CHECKLIST
North Arrow
Scale
High-Tide Line
Low-Tide Line
Substrate Type
LEGEND
Recommended Oil-Catchment Area
Salt-Water Marsh
Fresh- and/or Brackish-Water Marsh
POTENTIAL PROTECTION STRATEGY (FLOOD TIDE)
Path Of Oil
Deflection Boom
Harbor Boom
Tidal Barrier Boom
Skimmer Placement
Anchor Point / Hinge Line
tidal mudflat
salt marsh
LOW-TIDE CHANNEL
3000'
LEVEE
Bay Slough
BELMONT SLOUGH
POWER LINE
FEET
N

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Steinberger Slough - Site Summary 2-363 -A

County: San Mateo **GRP:** 3 **Latitude** 37 32 N **Longitude** 122 14 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 07/01/1995

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site extends from the mouth of Bay Slough to Bair Island and includes the marshes landward along Steinberger Slough and Smith Slough to Hwy 101. Steinberger Slough is on the southwest shore of South San Francisco Bay, two miles south of the San Mateo-Hayward Bridge. It lies to the northwest of Bair Island. This slough has no defined channel and is shallow. It has a well developed marsh and mudflat at the mouth and along its banks. It is part of San Francisco National Wildlife Refuge and California Department of Fish and Game Bair Island and Redwood Shores Ecological Reserve.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

"A" priority all year. Endangered species are present all year.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This site has extensive marshes and mudflats at the mouth and along its length.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; Threatened - western snowy plover; California Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.

Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew.
The sloughs and mudflats are important habitat for fish, shellfish and infauna.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
		Baylands Nature Preserve	(650) 329-2506	
B	H. C. Dr. Monroe	College of San Mateo	(650) 574-6161	
B	Diane Kopec	Earth Island Institue (seals)	(650) 728-5816	
B	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-363 -A Steinberger Slough - Site Strategy

County: San Mateo **CHART** 18649/18650 Entrance to SF Bay Latitude 37 32 N Longitude 122 14 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site **Update**

This site extends from the mouth of Bay Slough to Bair Island and includes the marshes landward along Steinberger Slough and Smith Slough to Hwy 101.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Aircraft beware of overhead power lines nearby; vessels be aware of shallow water; channel not clearly marked.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

The concern is oil and response impacts to marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Steinberger Slough. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-363.1 (USCG Strategic Objective: **5**) **Dates:** SISRS 03/01/1995 Approved last tested ACP date 07/01/1995

Objective or Prevention Condition

Exclude oil from entering/leaving Steinberger Slough

Technique Details Check here means **" No strategy diagram":** **( )** Check here means **"Contact CCC": ( )**

1) Deploy 3,500 ft of 18" deflection curtain boom along the north side channel margin to diver oil to a skimmer positioned in the main slough channel. Connect this boom to exclusion boom deployed as part of the Belmont Slough strategy (A-2-362) to exclude oil from Bay Slough and the marsh NW of Steinberger Slough mouth.

2) Place a vessel operated skimmer in main slough channel. Use a portion of original 3,500 ft of boom deployed for legs of skimmer. Connect southern let to levee or extend out to remnant concrete pier on small island on the south side of main channel.

3) Place tidal barrier boom across mudflats on both sides of main channel. Connect to curtain boom.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-363.1	3500		TB 500	16/22+/danforth & chain		2/1	SPS	1 Bboat: very shallow draft	10-15		5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Nearest vehicle access is San Carlos Airport: exit Hwy 101 at Holly/Redwood Shores Pkwy.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
No road access to Bair Island

WATER LOGISTICS:

Access limitations: depth, obstructions: no defined channel, impassable at low tide, very shallow.

Boat Launching, Loading, Docking and Services Available: Nearest launch is at Redwood City

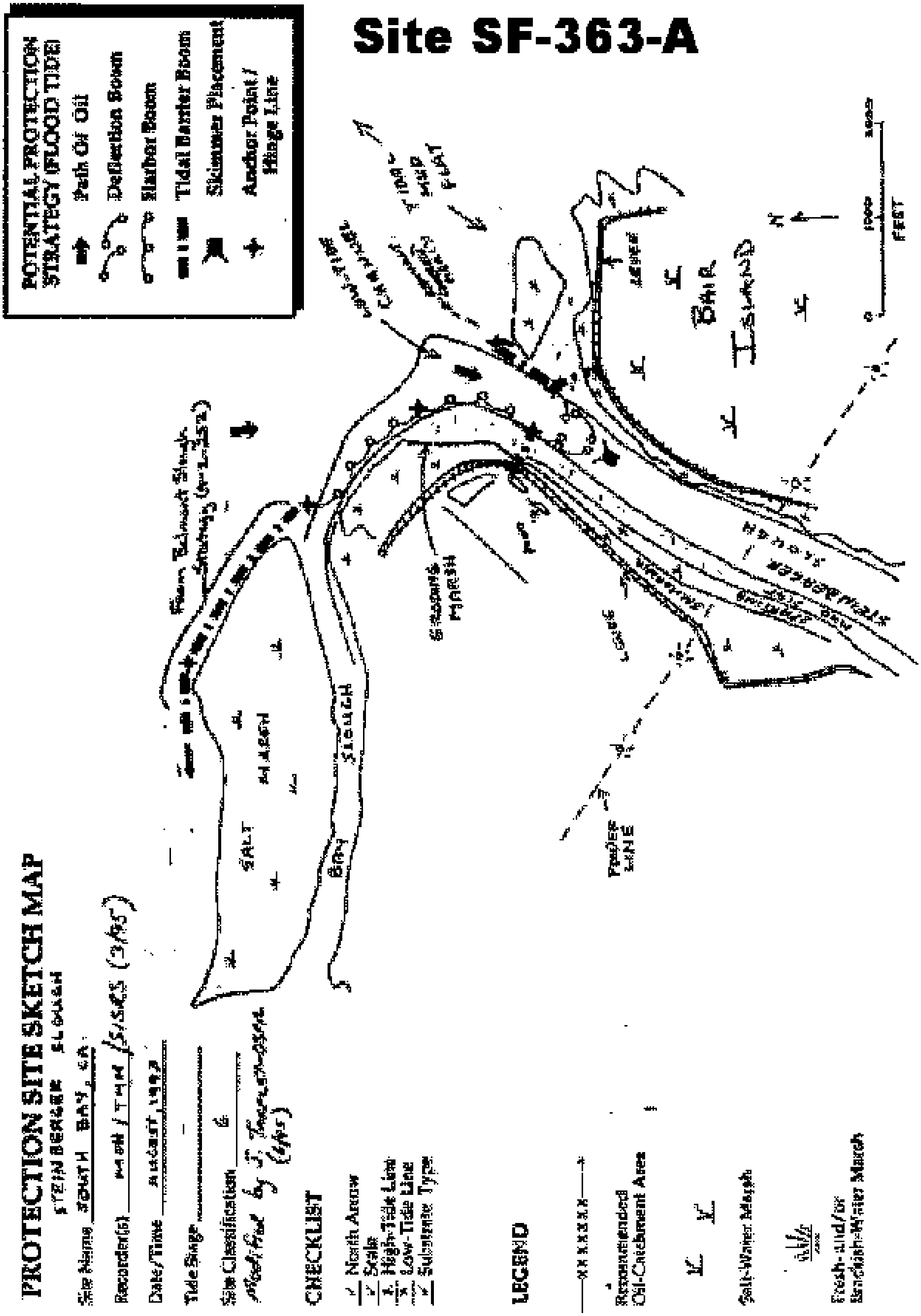
FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Staging at Port of Redwood City, possibly through sewage facility on north side of channel.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

Site SF-363-A


POTENTIAL PROTECTION STRATEGY (FLOOD TIDE)
Path Of Oil
Deflection Boom
Exclusion Boom
Tidal Barrier Boom
Skimmer Placement
Anchor Point / Hinge Line
PROTECTION SITE SKETCH MAP
Site Name
Recorder(s)
Date/Time
Tide Stage
Site Classification
CHECKLIST
North Arrow
Scale
High-Tide Line
Low-Tide Line
Substrate Type
LEGEND
Recommended Oil-Catchment Area
Salt-Water Marsh
Fresh-and/or Brackish-Water Marsh
SALT MARSH
BAY SLOUGH
BAIR ISLAND
LEVEE
N
FEET

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Bair Island - Site Summary 2-364 -A

County: San Mateo **GRP:** 3 **Latitude** 37 32 N **Longitude** 122 14 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 07/01/1995

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

The site includes all of Bair Island between the mouths of Redwood Creek and Steinberger Slough. Bair Island has an extensive marsh complex inside its levees. Water flows through breeches in several places around the island. A large fringe marsh exists outside the levee along Redwood Creek. The "island" is located on the southwest shore of South San Francisco Bay, three miles south of the San Mateo-Hayward Bridge. It is bounded on the south east by Redwood Creek, on the northwest by Steinberger Slough and on the south by Corkscrew Slough. It is part of San Francisco National Wildlife Refuge and California Department of Fish and Game Bair Island Ecological Reserve.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

"A" priority all year. Endangered species are present all year. The greatest risk to harbor seals is during spring breeding season 15 March - 10 June, pups can ingest oil on female's fur during nursing; disturbance during brief lactation period (3-5 weeks) can reduce pup's survival after weaning; moderate risk year-round from inhalation of volatile oil fractions and ingestion of contaminated prey.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

This has an extensive marsh complex inside its levees. Water flows through breeches in several places around the island. A large fringe marsh exists outside the levee along Redwood Creek and outer levees and islands. The bay frontage has an extensive tidal mudflat.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; Threatened - western snowy plover; Calfinoria Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.

Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew. Harbor seals haulout along north side of creek. This is the largest harbor seal rookery in San Francisco Bay. Seal numbers during spring/breeding season have reached 350 adults + 100 pups, nonbreeding 5 - 70 seals

The sloughs and mudflats are important habitat for fish, shellfish and infauna.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	H. C. Dr. Monroe	College of San Mateo	(650) 574-6161	
B	Diane Kopec	Earth Island Institue (seals)		
B	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-364 -A Bair Island - Site Strategy

County: San Mateo **CHART** 18649/18650 Entrance to SF Bay Latitude 37 32 N Longitude 122 14 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site
The site includes all of Bair Island between the mouths of Redwood Creek and Steinberger Slough.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
The concern is oil and response impacts to marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering openings to Bair Island and adjacent sensitive sites. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-364.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 03/01/1995 Approved last tested ACP date 07/01/1995

Objective or Prevention Condition
Exclude oil from entering Bair Island: close openings to interior.

Technique Details Check here means **" No strategy diagram":** ( ) Check here means **"Contact CCC":** ( )
1) Several breeches in the levee around Bair Island exist. These channel entrances lead to an extensive marsh complex inside Bair Island. It is critical that these channnel entrances be blocked. The use of curtain boom, swamp boom, sorbent boom, sand bags, or a combination thereof may be deployed.
2) A large levee breech exists approximately halfway between Steinberger Slough and Redwood Creek. This channel entrance should be blocked using any methods or equipment possible.

Strategy 2-364.2

(USCG Strategic Objective: **8**) **Dates:** SISRS 03/01/1995 Approved last tested ACP date 07/01/1995

Objective or Prevention Condition
Protective booming of exposed marsh frontage.

Technique Details Check here means **" No strategy diagram":** ( ) Check here means **"Contact CCC":** ( )
Deploy 4,000 ft of exclusionary tidal barrier boom around unleveed marsh on eastern Bair Island, northwest of Redwood Creek, beginning near levee breech midway along the bay side shore. Extend boom east and south into Redwood Creek channel. Connect with curtain boom from Redwood Creek strategy (2-365-A).

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-364.2			4000	17/22+/danforth c chain & line		2/1		Very shallow water Bboat			8
2-364.1	200			3/22+/danforth c chain	200	1/1		very shallow Bboat	5		5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Bair Island has no vehicular access. By water it is at the mouth and to the north of Redwood Creek, just bayward of the Port of

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
foot: no road access to Bair Island.

WATER LOGISTICS:
Access limitations: depth, obstructions: very shallow on bay frontage and at margins.
Boat Launching, Loading, Docking and Services Available: Port of Redwood City

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Port of Redwood City.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

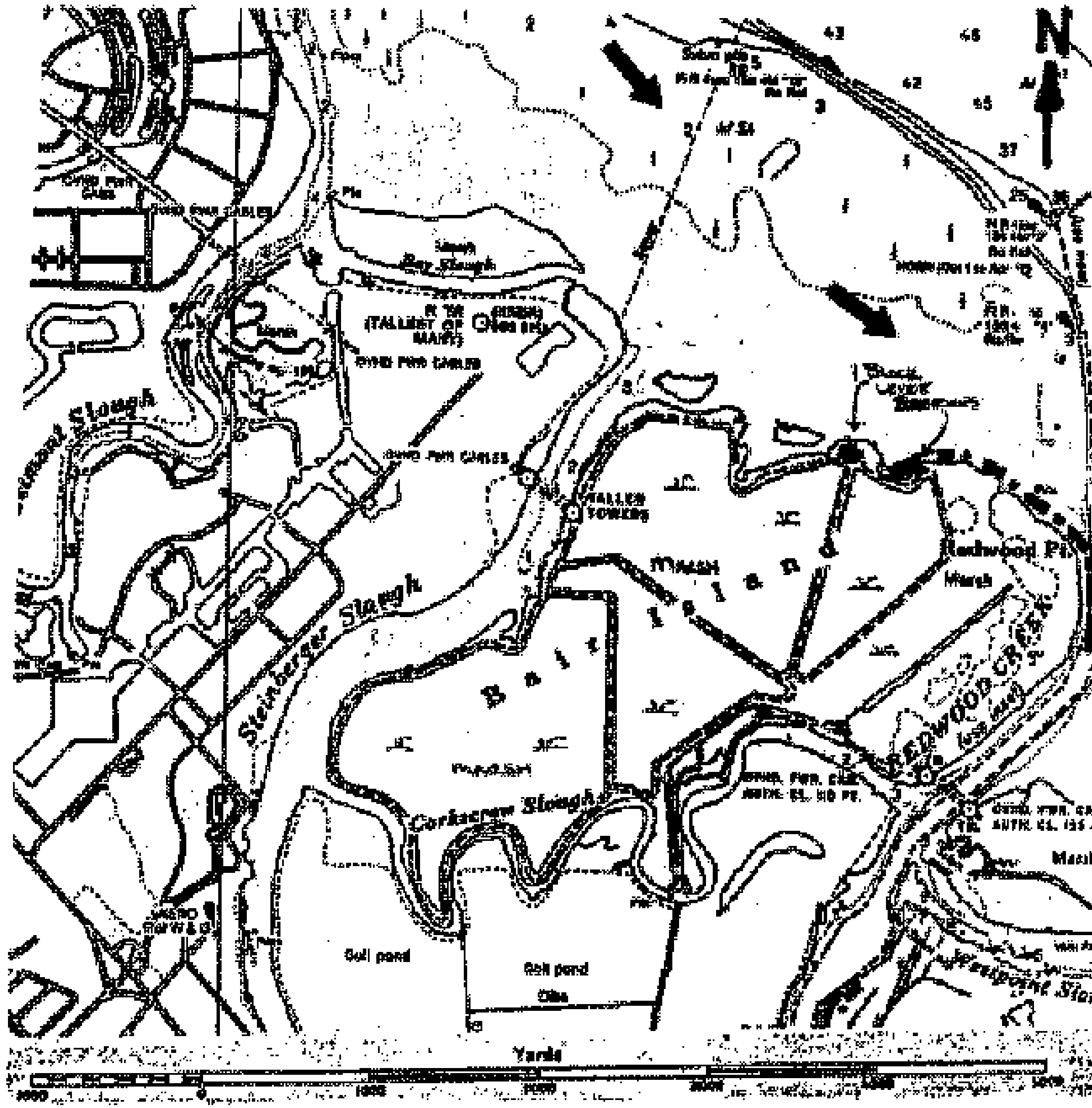
ADDITIONAL COMMENTS

SITE NAME Bair Island
DATE/TIME 5/5/95 (3/45)
TIDE STAGE Flood
SITE NO SF-364-A

CHECKLIST:

✓ North Arrow
✓ Scale

Site SF-364-A



POTENTIAL PROTECTION STRATEGY (FLOOD TIDE)

- Path of Oil
- Deflection Boom
- Oil on Shoreline
- Skimmer Placement
- Anchor Point/ Hinge Line
- Sediment Dike
- Tidal Barrier Boom
- Marsh

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Redwood Creek - Site Summary 2-365-A

County: San Mateo **GRP:** 3 **Latitude** 37 32 N **Longitude** 122 14 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 07/01/1995

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**

The site includes Redwood Creek from its mouth to Hwy 101 and Westpoint Slough , and several small side channels (but not Corkscrew Slough). Redwood Creek is the dredged channel for the Port of Redwood City. Its banks are lined with cordgrass and pickleweek marshes. Large tidal flows through this creek feed other connecting sloughs and marshes. Portions of the mouth are included in San Francisco National Wildlife Refuge.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**

"A" priority all year. Endangered species are present all year.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

The banks of Redwood Creek, West Point Slough and other channels are lined with cordgrass and pickleweek marshes. Large tidal flows through this creek feed other connecting sloughs and marshes. These marshes and associated mudflats support a wide variety of species including many Special Status Species.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; Threatened - western snowy plover; Calfinoria Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.

Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew. Harbor seals haulout along north side of creek.

The sloughs and mudflats are important habitat for fish, shellfish and infauna.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	H. C. Dr. Monroe	College of San Mateo	(650) 574-6161	
B	Diane Kopec	Earth Island Institue (seals)		
BT	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-365 -A Redwood Creek - Site Strategy

County: San Mateo **CHART** 18649/18650 Entrance to SF Bay Latitude 37 32 N Longitude 122 14 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

The site includes Redwood Creek from its mouth to Hwy 101 and Westpoint Slough , and several small side channels (but not Corkscrew

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

The concern is oil and response impacts to marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Redwood Creek. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-365.1

(USCG Strategic Objective: **7,8**) **Dates:** SISRS 03/01/1995 Approved last tested ACP date 07/01/1995

Objective or Prevention Condition

Deflect past, Deflect to collection, Protective boom shoreline.

Technique Details Check here means **" No strategy diagram":** ( ) Check here means **"Contact CCC":** ( )

1) Deploy several 600+ ft sections (3000 ft) of 30 to 48 inch curtain boom with heavy anchors from Redwood Creek channel markers #3,4,5, and 6 to deflect oil back into main current and away from shore.
2) Deploy 1,500 ft of 18 inch deflection curtain boom off both channel markers #7 and 8.
3) Deploy 5,000 ft of 18 inch curtain boom along the north channel margin and connect with tidal barrier boom deployed in the Bair Island strategy (A-2-364). Exclude and deflect oil away from the marsh into a skimmer system located in the main channel near channel markers #9 and 10.
4) Skimmer system should be set up so that it can rearranged for flood and ebb tides.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO	
2-365.1	3000	8000	4000	35/22+ & 15/40+/danforth w chain		2000	6/3	sfs 1	very shallow Bboats		25-30	7,8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Vehicle access to margin of site is from Hwy 101, exit on Seaport Blvd and continue t Port of Redwood City or Municipal Marina. Vessel access is from the Port or marina bayward to the mouth of Redwood Creek.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
foot only except at harbors.

WATER LOGISTICS:

Access limitations: depth, obstructions: extreme shallows near shore.

Boat Launching, Loading, Docking and Services Available: On site: Redwood City Marina and Port of Redwood City.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Staging at Redwood City marina, harbor.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

PROTECTION SITE SKETCH MAP

REDWOOD CREEK

Site Name SOUTH BAY, CA

Recorder(s) MOH/THM/SISRS (3/95)

Date/Time AUGUST, 1993

Tide Stage -

Site Classification 6

Modified by J. TAPPLEY - OSPR (6/95)

CHECKLIST

- ✓ North Arrow
- ✓ Scale
- ✓ High-Tide Line
- ✓ Low-Tide Line
- ✓ Substrate Type

LEGEND

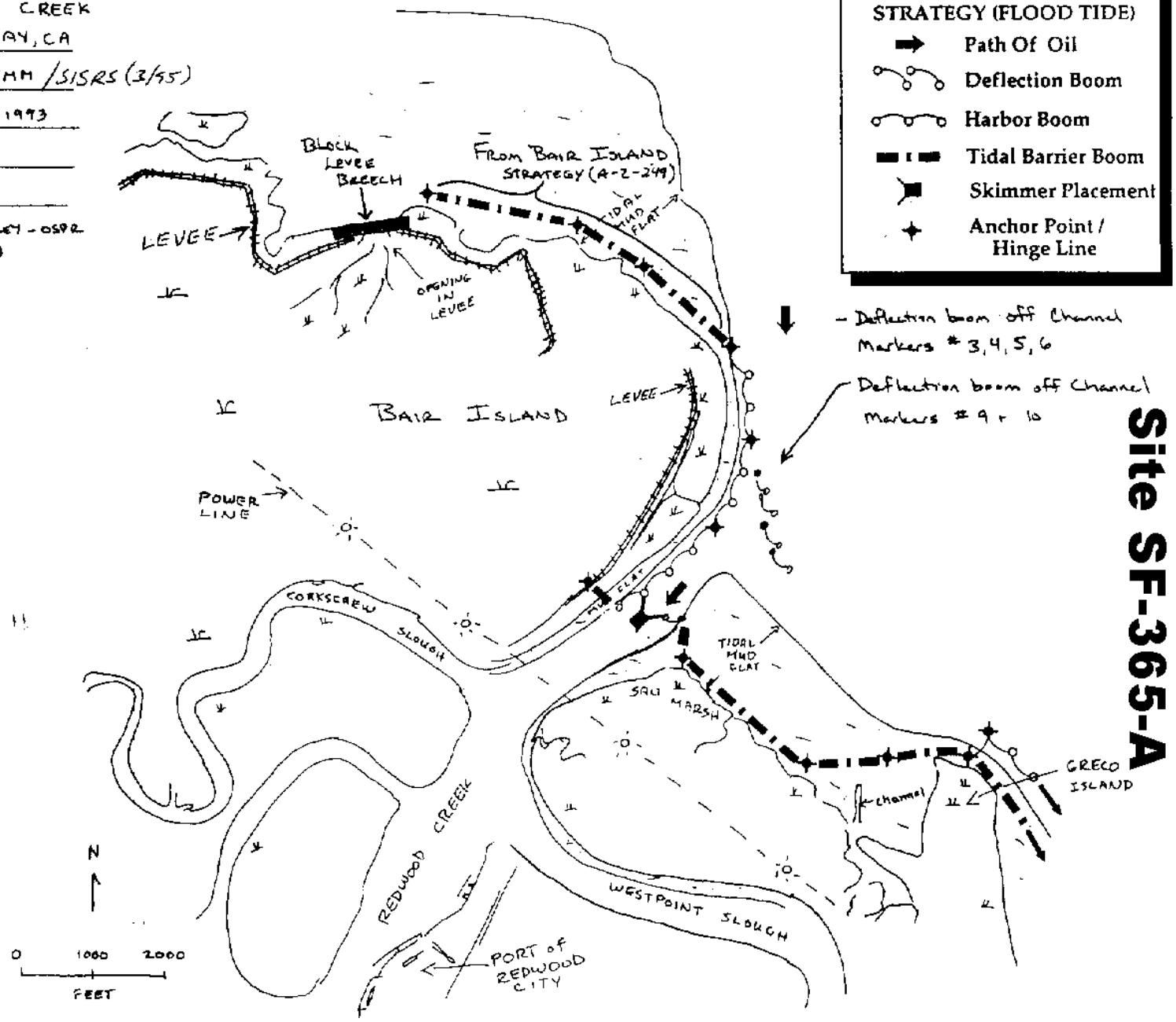
-----XXXXXXX----→ Recommended Oil-Catchment Area

Salt-Water Marsh

Fresh- and/or Brackish-Water Marsh

POTENTIAL PROTECTION STRATEGY (FLOOD TIDE)

- Path Of Oil
- Deflection Boom
- Harbor Boom
- Tidal Barrier Boom
- Skimmer Placement
- Anchor Point / Hinge Line



Site SF-365-A

San Francisco Bay & Delta
9973-GRP3-73

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Corkscrew Slough - Site Summary 2-366-A

County: San Mateo **GRP:** 3 **Latitude** 37 31 N **Longitude** 122 14 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACPUpdate** 07/01/1995

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**

Corkscrew Slough lies to the south of Bair Island and extends from Redwood Creek on the east to Steinberger Slough on the west.

It is a water channel on the southwest shore of South San Francisco Bay, three miles south of the San Mateo-Hayward Bridge, on the back side of Bair Island. Primary water flow comes from Redwood Creek. Its banks are lined with cordgrass and pickleweek marsh. The easterly half of the slough is included in the San Francisco National Wildlife Refuge.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**

"A" priority all year. Endangered species are present all year. The greatest risk to harbor seals is during spring breeding season 15 March - 10 June, pups can ingest oil on female's fur during nursing; disturbance during brief lactation period (3-5 weeks) can reduce pup's survival after weaning; moderate risk year-round from inhalation of volatile oil fractions and ingestion of contaminated prey.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

Margins of the slough are cordgrass and pickleweed with fronting tidal mudflats.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; Threatened - western snowy plover; California Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.

Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew. This is an important harbor seal pupping and haulout area.

The sloughs and mudflats are important habitat for fish, shellfish and infauna.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	H. C. Dr. Monroe	College of San Mateo	(650) 574-6161	
B	Diane Kopec	Earth Island Institue (seals)		
B/T	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	
B	Janet Hanson	San Francisco Bird Observatory	(650) 728-5816	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-366 -A Corkscrew Slough - Site Strategy

County: San Mateo **CHART** 18649/18650 Entrance to SF Bay **Latitude** 37 31 N **Longitude** 122 14 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site
Corkscrew Slough lies to the south of Bair Island and extends from Redwood Creek on the east to Steinberger Slough on the west.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water and strong currents.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
The concern is oil and response impacts to marsh, wildlife, including seal pupping, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Corkscrew Slough. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-366.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 03/01/1995 Approved last tested ACP date 07/01/1995

Objective or Prevention Condition
Exclude oil from entering Slough.

Technique Details Check here means **" No strategy diagram":** ( ) Check here means **"Contact CCC":** ( )
1) Protect from spills coming from the Bay by implementing Redwood Creek (A-2-365) and Steinberger Slough (A-2-363) strategies. The main flow of water into Corkscrew Slough is through Redwood Creek.
2) Protection from spills inside the Port of Redwood City: Deploy 2,000 ft of 18" curtain boom across slough mouth with a J-hook on the deeper, south side of the channel.
3) Deploy additional lines of sorbent boom and/or curtain boom inside the slough.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-366.1	2000			15 / 22=/ Danforth w chain &	2000	2/0		very shallow Bboats	3-6		5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
This site is accessible from water only, just bayward and across creek from Port of Redwood City. Nearest land access is Port and marina: Exit Hwy 101 on Seaport Blvd and proceed bayward to marina and Port.
Not Available

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
foot only, vehicles at harbor nearby

WATER LOGISTICS:
Access limitations: depth, obstructions: very shallow near shore
Boat Launching, Loading, Docking and Services Available: Port of Redwood City and marina

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Port of Redwood City. No road access to Bair Island.

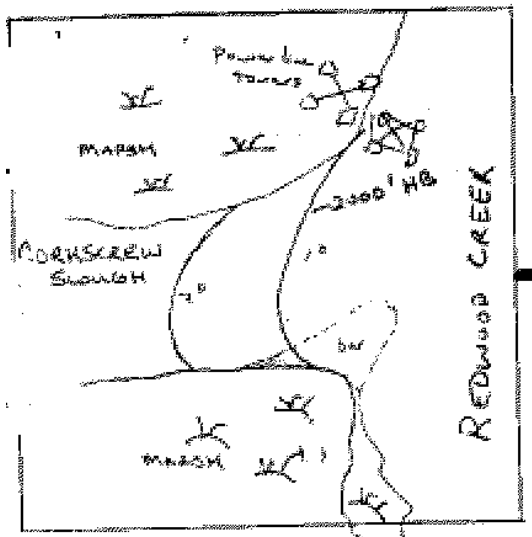
COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

SITE NAME Corkscrew Slough
DATE/TIME SISRS 3/95
TIDE STAGE Flood
SITE NO A-2-258

CHECKLIST:

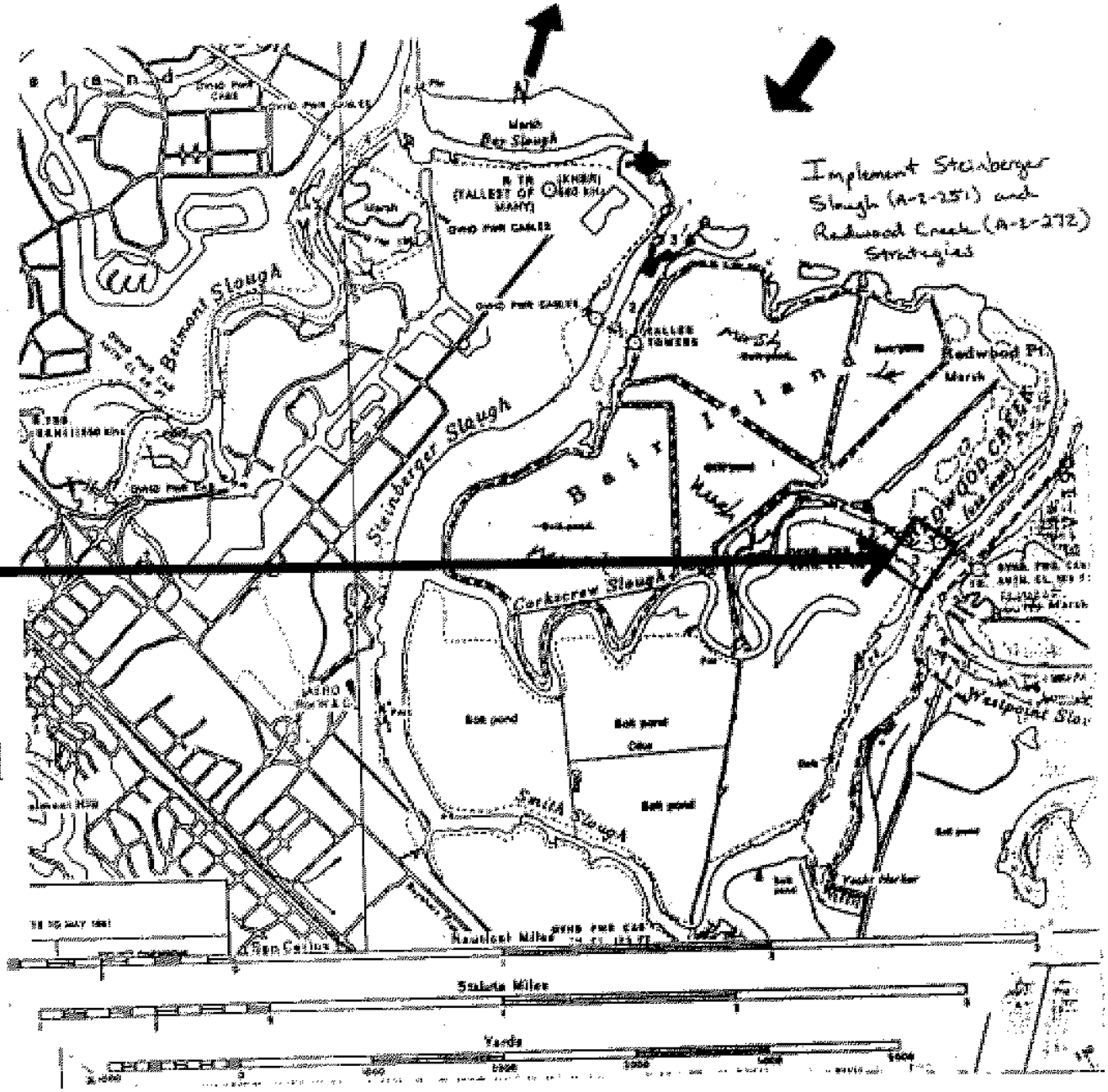
✓ North Arrow
✓ Scale



POTENTIAL PROTECTION STRATEGY (FLOOD TIDE)

Path of Oil
Deflection Boom
Oil on Shoreline
Skimmer Placement
Anchor Point/
Hinge Line
Sediment Dike

Implement Steinberger Slough (A-2-251) and Redwood Creek (A-2-272) Strategies



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Greco Island/Ravenswood Slough - Site Summary 2-367-A

County: San Mateo **GRP:** 3 **Latitude** 37 31 N **Longitude** 122 12 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 07/01/1996

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)

This site extends from the mouth of Redwood Creek to the Dunbarton Bridge and includes Greco Island, Ravenswood Slough and the marsh between the Slough and Ravenswood point. Greco Island is a saltmarsh island on the southwest shore of South San Francisco Bay, one mile northwest of the Dumbarton Bridge. It is bounded on the northwest by Redwood Creek and on the southwest by Westpoint Slough. Ravenswood Slough opens to the Bay south of Greco Island near Westpoint Slough. Fringing cordgrass/pickleweek marshes line the mouth and banks. The Greco Island site was combined with formerly designated Ravenswood Slough site due to their close proximity to each other, similar sensitivities, and combined response protection strategy.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)

"A" priority all year. Endangered species are present all year. The greatest risk to harbor seals is during spring breeding season 15 March - 10 June, pups can ingest oil on female's fur during nursing; disturbance during brief lactation period (3-5 weeks) can reduce pup's survival after weaning; moderate risk year-round from inhalation of volatile oil fractions and ingestion of contaminated prey.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

Habitats at risk include the pickleweed and cordgrass marshes of the islands and slough margins, high marsh suitable for seal rookery and haulout, and extensive mudflats, particularly on bayward margins.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)

Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; Threatened - western snowy plover; California Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.

Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew. Greco Island is a harbor seal haulout and rookery site. Seal number - Spring/breeding 25-60 adults + pups; nonbreeding 5-25 adults

The sloughs and mudflats are important habitat for fish, shellfish and infauna.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation, Northwest Information Center, (Leigh Jordan, Sonoma State College (707-664-2494))

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	H. C. Dr. Monroe	College of San Mateo	(650) 574-6161	
B	Diane Kopec	Earth Island Institue (seals)		
B/T	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	
B	Janet Hanson	San Francisco Bird Observatory	(650) 728-5816	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	

2-367 -A Greco Island/Ravenswood Slough - Site Strategy

County: San Mateo **CHART** 18649/18650 Entrance to SF Bay Latitude 37 31 N Longitude 122 12 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit the site

This site extends from the mouth of Redwood Creek to the Dunbarton Bridge and includes Greco Island, Ravenswood Slough and the marsh between the Slough and Ravenswood point.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)

The concern is oil and response impacts to marsh, wildlife, including seal pups and adults, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Ravenswood Slough, Westpoint Slough and small tidal sloughs. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-367.1

(USCG Strategic Objective: **5,8**) **Dates:** SISRS 03/01/1995 Approved last tested ACP date 07/01/1996

Objective or Prevention Condition

exclude oil from entering various sloughs, protective booming of bay frontage.

Technique Details Check here means **" No strategy diagram":** **( )** Check here means **"Contact CCC":** **( )**

1) Protection of this site requires the use of deflection booming off the Redwood Creek channel markers as described in the Redwood Creek strategy (A-2-365).

2) Additionally, deploy 8,000 ft of 18 inch deflection curtain boom along the outer edge of the mudflat from the prominent point by side of Greco Island south to the point on the levee between Ravenswood Point and Ravenswood Slough.

3) Deploy 10,000 ft of exclusionary tidal barrier boom across the upper portion of the mudflat fronting the marsh of Greco Island and entrances to Ravenswood and Westpoint Sloughs. Connect boom at the north end with Redwood Creek strategy. ALTERNATIVES: It is critical that channel entrances leading into Greco Island be blocked. If tidal barrier boom should fail or time to impact does not permit its deployment. Block channel mouths with curtain boom, swamp boom, sorbent boom, or combination thereof.

Table of Response Resources

strategy	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-367.1	8000	2000	10000T	60/22+/danforths & stakes	2000	6/10	0	very shallow Bboats	35-45		5,8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

There is no vehicle access to this site. Nearest vehicle access is Port of Redwood City: Exit Hwy 101 at Seaport Blvd and continue bayward to Port or marina. Water access is from Port or Marina immediately to the south from Redwood Creek.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
No road access

WATER LOGISTICS:

Access limitations: depth, obstructions: Very shallow mudflats.

Boat Launching, Loading, Docking and Services Available: Redwood City marina and Port

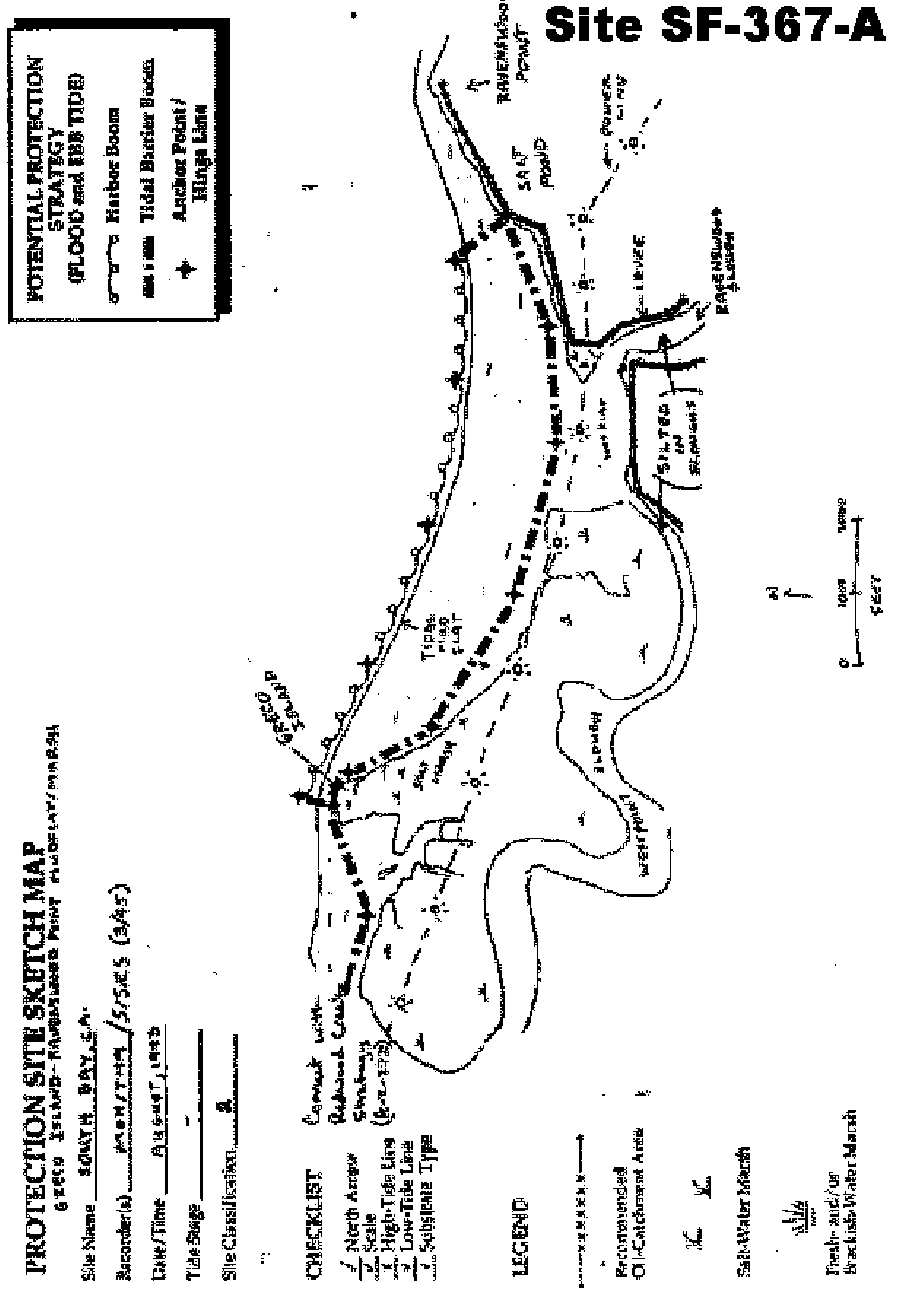
FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Staging at Redwood City marina, harbor.

COMMUNICATIONS LIMITATIONS / PROBLEMS: **X** No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

Site SF-367-A


POTENTIAL PROTECTION STRATEGY
(FLOOD and EBB TIDE)
Harbor Boom
Tidal Barrier Boom
Anchor Point / Hinge Line
PROTECTION SITE SKETCH MAP
Site Name
Recorder(s)
Date/Time
Tide Stage
Site Classification
CHECKLIST
North Arrow
Scale
High-Tide Line
Low-Tide Line
Substrate Type
LEGEND
Recommended Oil Catchment Area
Salt-Water Marsh
Fresh- and/or Brackish-Water Marsh
RAVENSWOOD POINT
SALT POND
LEVEE
RAVENSWOOD SLOUGH
TIDAL FLAT
SALT MARSH
FEET
0
1000
2000